



**City of Baltimore**

**Low Level Sewershed Study**

**Inflow/Infiltration Report**

August 15, 2008



# Inflow/Infiltration Report

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## Appendix

- Raw Results for Dry Weather Analysis
- Raw Results for Wet Weather Analysis

### Attached CD Contains the Following Files:

- Site Reports of all flow meters, rain gauges, and ground water gauges
- Yearly hydrograph of every site (Q and rain)
- Yearly scattergraph of every site
- Q to i graph (RDII volume/rain volume) of all sites.
- Flowload database from Sliicer



### 1.0 Introduction

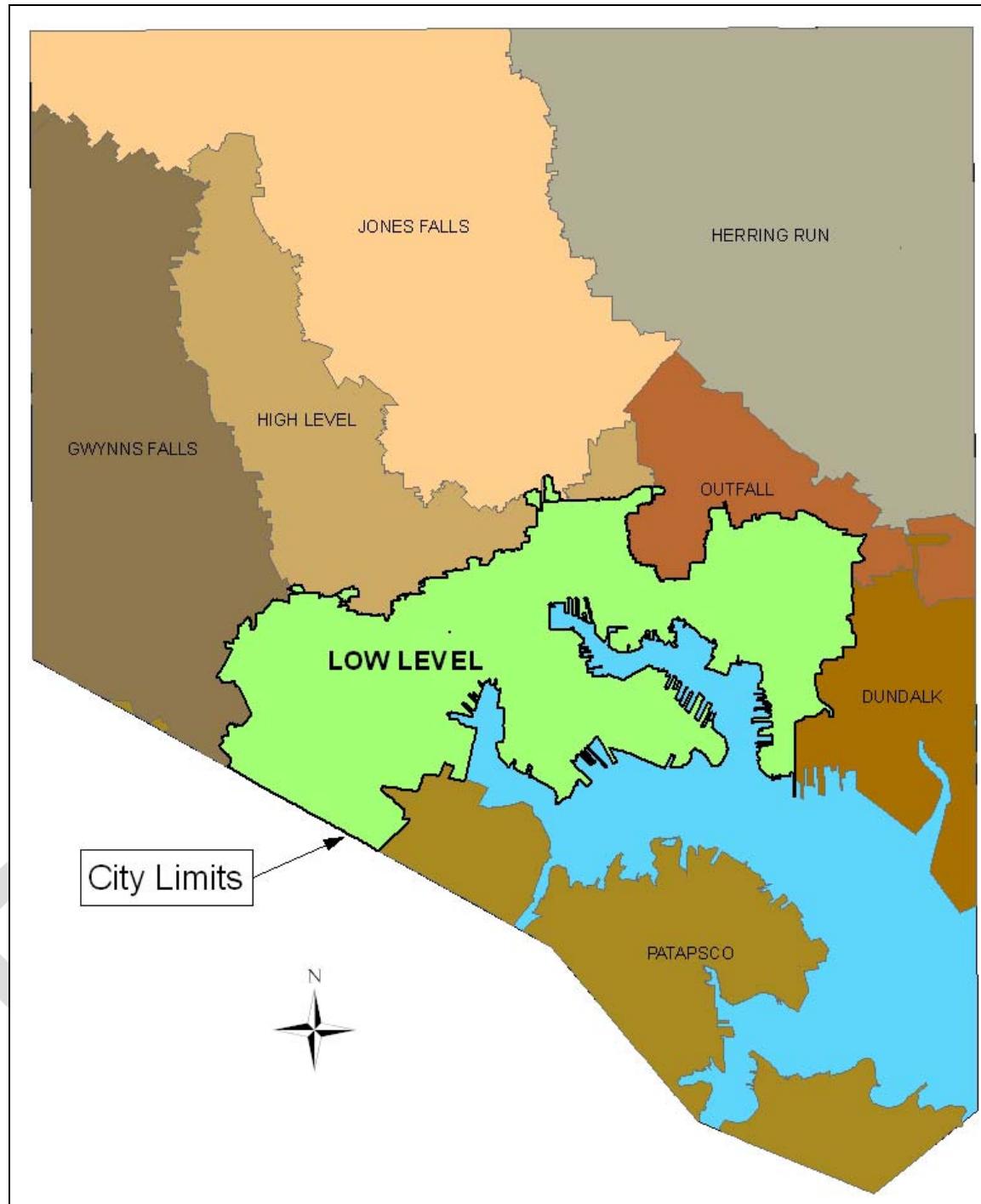
#### 1.1 Sewershed Description

The Low Level sewershed is located in the downtown and harbor areas of the City of Baltimore, identified in Figure 1-1. The sewershed includes dense residential areas, heavily industrial areas and the downtown commercial districts. The mixture of diverse land uses and the significant industrial areas make Low Level unique amongst the City's eight primary sewersheds. The sewershed includes 13.3 square miles of contributing drainage area and a sewer network of approximately 82 miles of gravity sewer ranging from 10-inches to 84-inches in diameter. Low Level consists of two primary Interceptors (East and West) that convey flow to the Eastern Avenue Pump Station, which in turn pumps the flow to the Main Outfall Interceptor (see Figure 1-2).

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**Figure 1-1: Location of Low Level Sewershed**

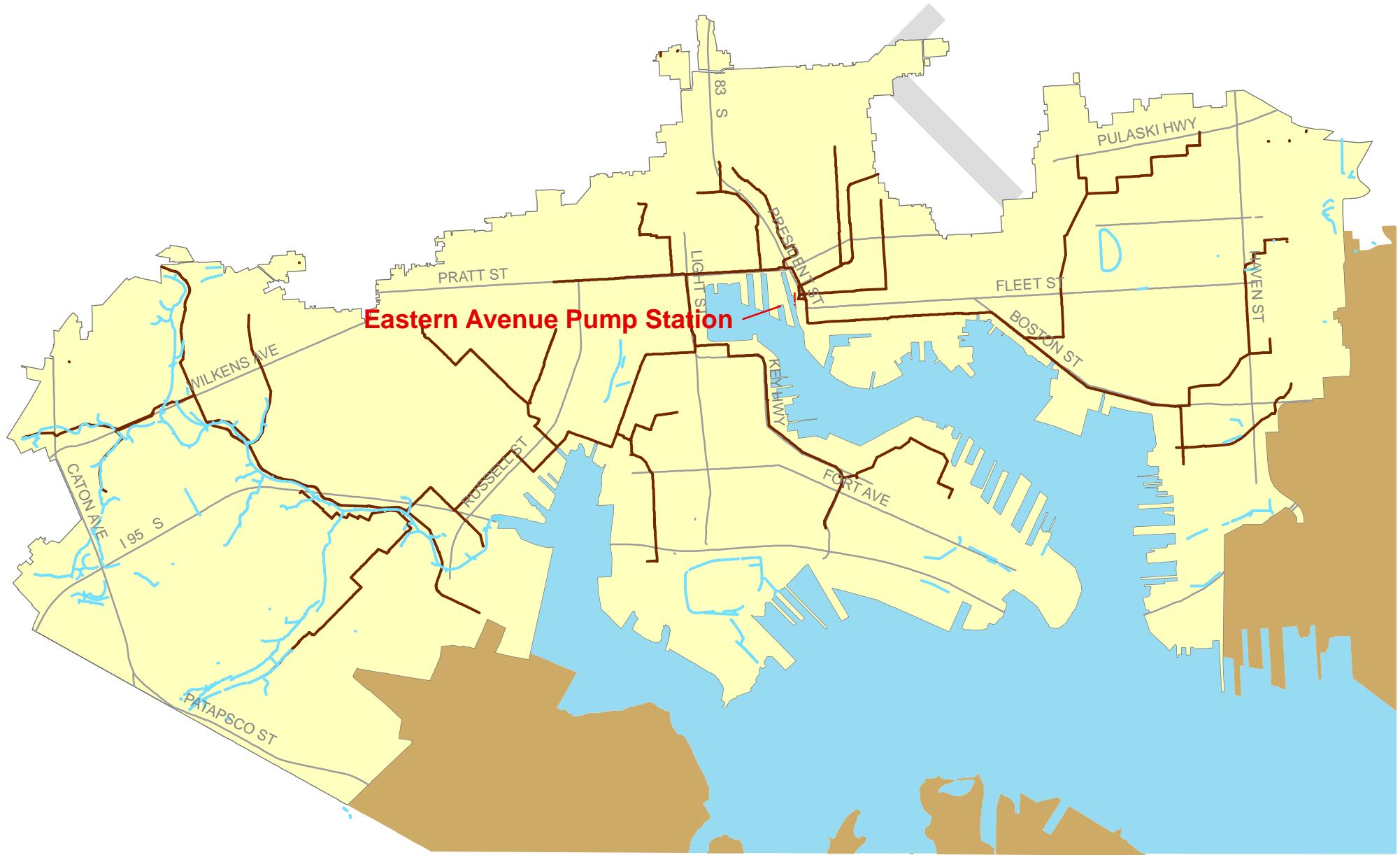


Figure 1-2: Low Level Interceptors and Pump Station



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### 1.2 Objectives of the Study

The City established two main objectives for the Comprehensive Flow Monitoring Program:

1. Collect accurate rainfall and flow data – The program would accomplish this goal by requiring:
  - The use of the latest metering technology and Doppler radar rainfall measurement.
  - Daily data collection using wireless communication, which identifies equipment malfunctions sooner and, therefore, maximizes rainfall and flow data availability.
  - A multiple-tier data processing and data quality assurance by the service providers and the City.
2. Standardize I&I evaluation – This goal would be accomplished by:
  - Establishing standard I&I evaluation parameters and definitions for the use of all Sewershed Consultants.
  - Requiring all Sewershed Consultants to use a standard I&I evaluation software (Sliicer.com®, a registered mark of ADS Corporation).

### 1.3 Recently Completed Sanitary Projects

No recent sanitary projects have been completed in the Low Level Sewershed.

### 1.4 BaSES Manual Requirements

The Baltimore Sewer Evaluation Standards Manual (BaSES), developed by the City for the sewershed studies, establishes guidelines for the I&I analyses and outlines additional requirements.



## 2.0 Flow Monitoring Program

### 2.1 Overall Description

To fully understand the dynamics of the sewage collection system, the City completed a detailed City-wide monitoring program. The program consisted of flow meters within the City's collection system and rain gauges spread throughout the City and County. The monitors measured depth and velocity, from which flow was calculated at five minute intervals. The monitoring program consisted of over 350 flow monitors City-wide, with 55 of the meters located within the Low Level sewershed from May 9, 2006 to May 18, 2007. Some meters deemed long term meters have stayed in place. See Table 2-1 for a list of meters, their sub-basin characteristics, and installation purpose, and Figure 2-1 for a location map of the meters and rain gauges. Figure 2-2 depicts a schematic of the monitoring plan. In addition to the flow monitors, 20 rain gauges were installed City-wide with some gauges installed outside of the City limits. All 20 rain gauges were utilized in conjunction with the generated radar rainfall for analysis.

### 2.2 Summary Description of the Metering Network Within the Sewershed

The 55 flow-monitoring sites within the Low Level Sewershed were selected depending on the use of the flow data. The majority of the sites, 51, were installed for infiltration and inflow (I&I) evaluation; whereas all 55 sites were used for calibration of the hydraulic model. Table 2-1 lists the meters, their sub-basin characteristics, and installation purpose. Using the City's Geographical Information System (GIS) the metering sites for I&I evaluation were selected at a meter density of approximately one for every 25,000 linear feet of sewer pipe. Figure 2-2 is a flow schematic of the meter network within the Low Level Sewershed.

### 2.3 Flow Metering

#### 2.3.1 Equipment Description

The meters used for the City-wide Flow Monitoring Program were depth-velocity meters designed to calculate flow based on measured depths and velocities in sanitary sewer pipes under free-flow and surcharged conditions. The primary depth sensor is ultrasonic with a resolution to the nearest 0.01 foot. The meters have level measurement redundancy, in the form of a pressure sensor, with accuracy of +/- .25 percent of full scale. The project required that the primary velocity sensor use Doppler technology, capable of measuring flow velocities in the range between -5 to +15 feet per second. The sensors were securely attached to the pipe by means of metal bands or anchoring hardware designed specifically for that purpose.

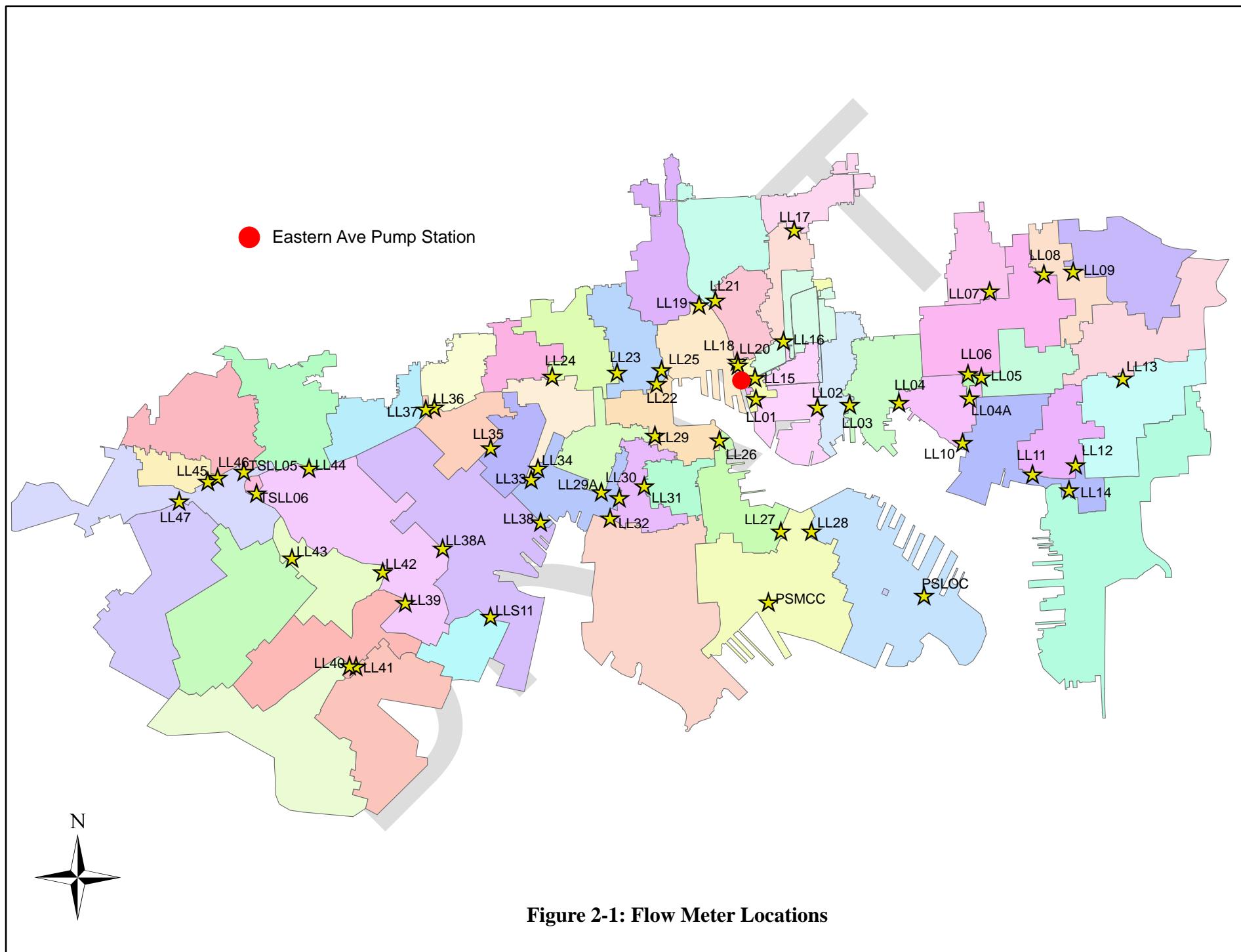
#### 2.3.2 Installation

Every flow monitoring location was verified by the flow monitoring Contractor by performing a thorough site investigation, including descending the manhole. The hydraulic conditions at each site dictated the metering equipment selection and optimal sensor placement. If a location was deemed unsuitable for flow monitoring, the Contractor was required to coordinate with the City and to investigate up to two alternate

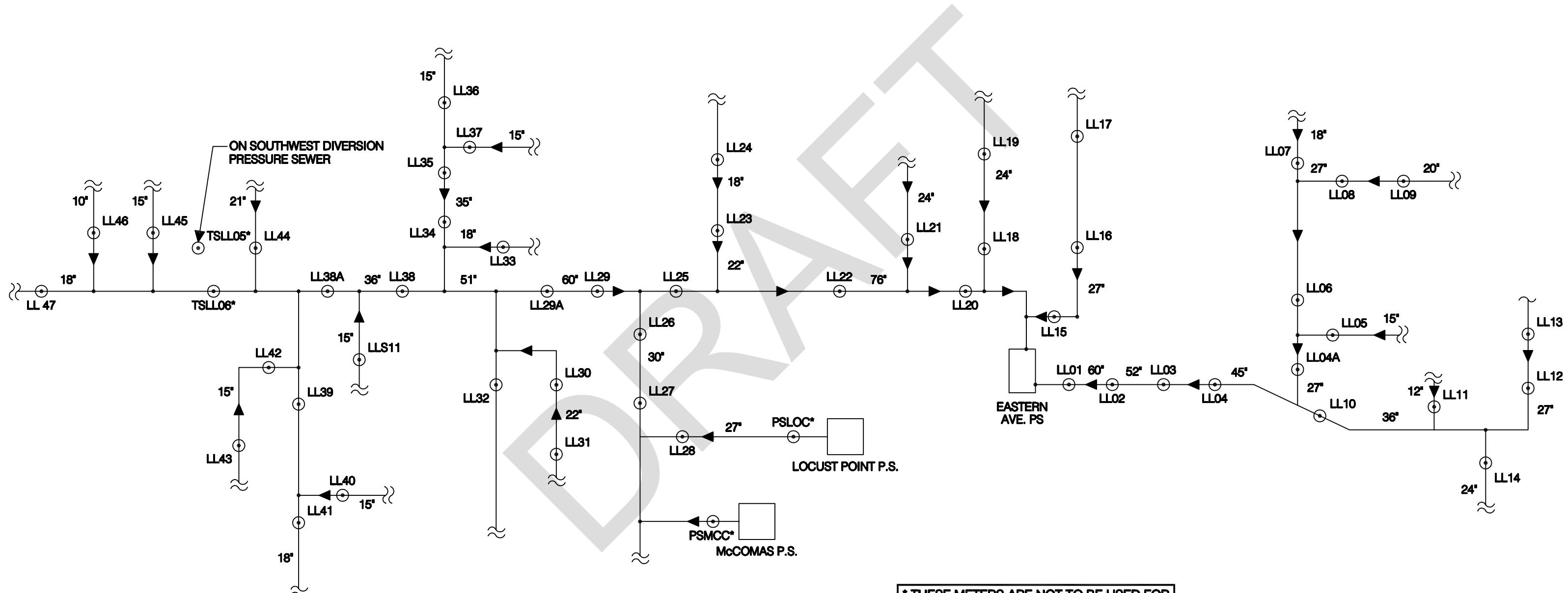
**Table 2-1: Meter Sub-basin Parameters**

Meter Sub-basin	Characteristics			Purpose
	Area (ac)	Sewer Length (ft)	Inch-Miles	
LL01/LL02*	212.66	51,092	114.71	I&I Evaluation; Model Calibration
LL03/LL04/LL04A*	222	63,916	137.89	I&I Evaluation; Model Calibration
LL05	94.29	19,784	31.17	I&I Evaluation; Model Calibration
LL06	231.64	34,937	71.87	I&I Evaluation; Model Calibration
LL07	98.87	33,166	54.15	I&I Evaluation; Model Calibration
LL08/LL09*	269.47	38,012	68.78	I&I Evaluation; Model Calibration
LL10	175.2	36,546	83.08	I&I Evaluation; Model Calibration
LL11	102.07	26,804	41.79	I&I Evaluation; Model Calibration
LL12	197.9	31,385	68.03	I&I Evaluation; Model Calibration
LL13	200.44	28,576	50.92	I&I Evaluation; Model Calibration
LL14	417.9	18,948	39.44	I&I Evaluation; Model Calibration
LL15	93.98	29,446	52.97	I&I Evaluation; Model Calibration
LL16	65.61	16,848	33.35	I&I Evaluation; Model Calibration
LL17	82.79	28,790	46.75	I&I Evaluation; Model Calibration
LL18	85.47	21,887	44.21	I&I Evaluation; Model Calibration
LL19	158.3	36,352	65.69	I&I Evaluation; Model Calibration
LL20	116.71	27,102	90.47	I&I Evaluation; Model Calibration
LL21	150.34	34,525	65.41	I&I Evaluation; Model Calibration
LL22	112.69	24,778	64.37	I&I Evaluation; Model Calibration
LL23	120.17	28,970	60.3	I&I Evaluation; Model Calibration
LL24	75.86	18,936	33.57	I&I Evaluation; Model Calibration
LL25/LL29*	185.9	34,167	114.4	I&I Evaluation; Model Calibration
LL26	117.5	24,203	53.26	I&I Evaluation; Model Calibration
LL27	319.26	27,273	51.86	I&I Evaluation; Model Calibration
LL28	374.7	27,013	56.43	I&I Evaluation; Model Calibration
LL29A	106.93	16,538	62.3	I&I Evaluation; Model Calibration
LL30	75.94	25,301	42.92	I&I Evaluation; Model Calibration
LL31	60.73	18,673	30.36	I&I Evaluation; Model Calibration
LL32	450.44	40,968	80.95	I&I Evaluation; Model Calibration
LL33	83.55	19,152	34.93	I&I Evaluation; Model Calibration
LL34	87.48	22,042	44.14	I&I Evaluation; Model Calibration
LL35	98.89	25,518	46.48	I&I Evaluation; Model Calibration
LL36	109.62	29,335	48.67	I&I Evaluation; Model Calibration
LL37	85.36	22,637	37.88	I&I Evaluation; Model Calibration
LL38	447.88	21,802	62.94	I&I Evaluation; Model Calibration
LL38A	353.94	27,401	86.28	I&I Evaluation; Model Calibration
LL39	196.87	28,093	53.97	I&I Evaluation; Model Calibration
LL40	253.05	30,823	50.02	I&I Evaluation; Model Calibration
LL41	315.33	43,196	73.65	I&I Evaluation; Model Calibration
LL42	122.36	19,918	37.47	I&I Evaluation; Model Calibration
LL43	293.22	35,870	57.63	I&I Evaluation; Model Calibration
LL44	190.37	45,120	75.09	I&I Evaluation; Model Calibration
LL45	203.98	20,392	32.5	I&I Evaluation; Model Calibration
LL46	52.66	8,711	13.41	I&I Evaluation; Model Calibration
LL47	282.73	31,130	57.8	I&I Evaluation; Model Calibration
LLS11	82.48	10,565	18.43	I&I Evaluation; Model Calibration
TSLL05				Model Calibration
TSLL06				Model Calibration
PSLOC				Model Calibration
PSMCC				Model Calibration

\*Meter tributary areas were combined for the I/I analysis to overcome the erratic influence of the Eastern Ave Pump Station



**Figure 2-2: Flow Meter Schematic**





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sites for consideration. The Contractor also checked for debris in the manhole that could impact data quality. For each location the Contractor prepared and submitted an electronic site investigation report, which included a general site location map, a sketch of the installation, the physical characteristics (diameter or other measurements as necessary to define the pipe cross-section, material, etc.) of the sewer pipe in which the sensors would be installed, manhole depth, and other comments deemed pertinent by the Contractor. In addition, survey-grade GPS (Maryland State Plane - +/- 0.5 inch) coordinates, pipe inverts and rim elevations; and three digital images of the site were required, including one showing the sensor installation.

The Contractor was required to evaluate the level of silt and debris at each monitoring location, and to provide sewer cleaning to ensure accuracy and reliability at each metering site. In the case of odd-shape pipes, or at sites where debris or sediment was present, the Contractor developed a profile and accurately determine the cross-sectional area of the pipe at the depth-measuring point. A typical flow monitor installation included the primary ultrasonic depth sensor mounted at the crown of the pipe, a redundant depth sensor mounted in the invert, and a Doppler primary velocity sensor mounted in or near the invert of the pipe. All flow meters and rain gauges were synchronized in time to the same clock, and programmed to collect depth and velocity data at five (5) minute intervals.

Upon installation and activation of each flow meter, the Contractor took manual depth and velocity readings using independent instrumentation to confirm that the in-situ monitor yielded data representative of actual field conditions. The field crews were required to take manual velocity readings of the cross-section (velocity profile) of the flow in order to determine the pipe hydraulic profile

### 2.4 Rainfall Measurement

The Contractor was required to measure the contribution from rainfall to all sewersheds within the City's jurisdictional boundary using a network of rain gauge stations with a minimum coverage of one (1) rain gauge station per ten (10) square miles, as well as data compiled by Doppler radar utilizing a minimum resolution of one (1) pixel per four (4) square kilometers. To measure the contribution from rainfall occurring in portions of the Collection System outside Baltimore City limits, the Contractor installed additional rain gauges outside the City limits.

#### 2.4.1 Equipment Description

The equipment consisted of a data logger able to accept data from an industry standard rain tipping bucket. The equipment was able to measure 0.1 inches (1 mm) per tip of bucket. The tipping bucket consisted of a corrosion resistant funnel collector with tipping bucket assembly.

#### 2.4.2 Installation



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Most rain gauges were installed on the roof of public schools in the City and the County, and facilities owned by the City's Department of Public Works (such as pump stations and treatment plants).

### 2.4.3 Radar Rainfall

In accordance with the requirements of the Consent Decree, the City performed Doppler Radar Rainfall Analysis in conjunction with rain gauges at a resolution of 1 gauge for every 10 square miles. The Contractor utilized the CALAMAR software platform to process each recorded rainfall event with an average total depth of greater than 0.5 inches of rain. CALAMAR is a tool used to study the hydrologic impacts of precipitation through a combination of radar images and a network of rain gauges installed over a geographic area. CALAMAR uses three databases: a radar image database, a rain gauge database and a geographical database. After collecting the rain gauge network data and the radar images, CALAMAR produces a model that provides geographically accurate, integrated rainfall intensity data for any pre-defined area. The Baltimore City geographical area was divided into 1 square kilometer pixels, and for every significant rain event Doppler Radar rainfall images were generated for every pixel within the Back River and Patapsco WWTP service areas. There were a total of 29 storms during the primary flow monitoring period. The characteristics of those storm events (based on average weighted rain gauge values) are listed in Table 2-2.

## 2.5 Ground Water Measurement

The Contractor installed groundwater gauges at 33 flow monitoring sites designated by the City. Each groundwater gauge consisted of a conduit (preferably a clear flexible tube) of sufficient diameter to accommodate a pressure sensor. The pressure sensor was calibrated prior to installation.

### 2.5.1 Equipment and Installation

The groundwater gauge connected through the manhole wall to the ground around the manhole near the bench of the manhole. The conduit was secured to the manhole wall or steps and extended vertically to a point 6 inches below the manhole lid. The connection through the manhole consisted of a drilled hole no larger than 1.25 inches in diameter, through which a PVC or metal pipe extended to approximately 6.0 inches outside the manhole and into the ground. At the end of this PVC or metal pipe a fine mesh was installed to let groundwater through but keep dirt and debris from clogging the pipe. The space between the manhole wall and the PVC or metal pipe was water-tight sealed with silicon caulking or similar material. The conduit connected securely to the PVC or metal pipe with the proper fittings and hardware to provide a water-tight connection.

## 2.6 Data Collection and Processing

The Contractor was required to use a host software support application program for remote wireless data collection of all flow meters, rain gauges, and ground water gauges. The host software maintained clock synchronization with the host system's clock for all field RTUs, thus



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**Table 2-2: Observed Storm Events**

Storm Date/Start Time	Rainfall Total (in)	Peak Intensity (in/hr)
5/11/2006 12:00	1.52	0.84
5/14/2006 23:00	0.70	0.19
6/2/2006 17:00	1.07	0.67
6/19/2006 14:00	0.32	0.29
6/24/2006 13:00	0.82	0.40
6/25/2006 4:00	6.47	1.22
7/5/2006 16:00	2.61	1.27
7/22/2006 14:00	0.79	0.33
9/1/2006 6:00	2.77	0.37
9/5/2006 2:00	2.07	0.89
9/14/2006 1:00	1.52	0.17
9/28/2006 16:00	0.92	0.59
10/5/2006 20:00	1.77	0.19
10/17/2006 7:00	1.10	0.24
10/19/2006 20:00	0.57	0.16
10/27/2006 14:00	2.12	0.39
<i>Summer 2006 Sub-total</i>	27.1	
11/7/2006 20:00	1.58	0.38
11/16/2006 8:00	2.34	1.31
11/22/2006 10:00	1.00	0.19
12/22/2006 12:00	1.29	0.22
12/25/2006 22:00	0.66	0.16
12/31/2006 12:00	1.10	0.19
1/7/2007 17:00	0.90	0.15
3/1/2007 18:00	1.00	0.25
<i>Winter 2007 Sub-total</i>	9.9	
3/15/2007 16:00	2.54	0.21
3/23/2007 13:00	0.43	0.04
4/4/2007 3:00	0.55	0.20
4/11/2007 21:00	1.04	0.25
4/14/2007 19:00	2.86	0.32
<i>Summer 2007 Sub-total</i>	7.4	
<b>TOTAL</b>	<b>44.4</b>	



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ensuring time interval integrity for all collected data. The City required the Contractor to use a system employing client/server architecture, capable of storing all project deliverables including flow and rainfall data; equipment configurations; event logs; and site parameters into a SQL database. The software allowed any networked computer (with the appropriate access rights) access to the data stored in the SQL database using a common web browser (e.g. Microsoft Internet Explorer). The web module was read only in order to protect data integrity, and had the ability to present near-real time data. Field data measurements could be forwarded to the server immediately following collection by the field RTUs, and the server could immediately post the data to the web site for viewing by authorized parties.

The Contractor was required to employ trained data analysts experienced in processing and analyzing flow and rainfall data from sanitary sewer systems. Various analytical tools, such as hydrographs, scattergraphs, and flow balancing methods were used to verify the accuracy and precision of the flow data. Data collection was performed remotely at least twice a week and was scheduled in a manner to allow data review by a trained data analyst within 24-hours of the data collection. The analyst assessed any maintenance or monitor performance issues, and a crew was dispatched within 48 hours, and the issue resolved within 72 hours from the time the issue was identified. All measurements, adjustments, and efforts undertaken during site visits were logged in an installation/maintenance log specific to that installation.

### 2.7 Monitoring Period

The period of flow metering extended from May 9, 2006 to May 18, 2007. Some meters deemed long term meters have stayed in place. See Table 2-1 for a list of meters, their sub-basin characteristics, and installation purpose.

### 2.8 Equipment Operation, Maintenance, and Uptime

The Contractor's qualified field crews visited each monitor installation as appropriate to perform any necessary maintenance to the equipment. As stated above, field crews were dispatched within 48 hours and any O&M issue was resolved within 72 hours from the time the issue was identified. The Contractor was required to collect useable flow data a minimum of 90% of the time throughout the monitoring period, and to submit to the City an "Uptime" table each month demonstrating compliance with the uptime requirement.

The uptime requirement would be generally satisfied with actual measured data. However, in instances where a velocity measurement was not available, inferred velocity from a reliable depth measurement would not be considered downtime if the Contractor demonstrated that accurate data could be obtained without the velocity measurement, and that the loss of velocity data was not caused by maintenance neglect. In any case, however, no velocity could be inferred for any measurement interval where (1) a corresponding depth measurement has not been obtained for that measurement interval or (2) independent calibration measurements have not been acquired for the site. The Contractor was required to identify all inferred velocity data or other data derived from inferred data in all reports and deliverables.



### 3.0 I&I Evaluation

#### 3.1 Sliicer.com Wet Weather Analysis Tool

Sliicer is a tool developed by ADS Environmental Services, Inc. to find the locations of the worst inflow/infiltration problems in a sanitary sewer collection system using rainfall and flow data. By itself in its raw form, flow data can be difficult to interpret. The purpose of Sliicer is to make interpreting flow data easier, so that conclusions about what to do to enhance the performance of the collection system can be developed. Sliicer also allows the user to integrate flow data with physical inspection data to find the best approach to fixing the collection system. Finally, Sliicer generates the flow components necessary to calibrate the hydraulic model.

#### 3.2 Global Settings

Global Settings are Sliicer parameters established by the City to be used by all Sewersheds Consultants. These parameters should not be changed and will provide a necessary degree of standardization. Global settings include:

- The average dry day flow normalized by the linear feet contained in each sub-basin.
- The time step averaging will be 30 minutes.
- Criteria for defining dry days and which days should be excluded.
- Two seasons will be considered: Eastern Daylight Time and Eastern Standard Time.
- The threshold for a rain event to be considered in the analysis is 0.5 inches in 24 hours.
- The default method for computing wastewater production will be the Stevens-Schutzbach Method.
- The rolling method will be used for rainfall peaks.
- The units used are million gallons per day for flow rates, million gallons for volume, feet per second for velocity, and inches for flow depth.

#### 3.3 Dry Weather Analysis

##### 3.3.1 Dry Day Selection

Following the criteria established within the BaSES Manual, dry days were defined according to the following table:

**Table 3-1: Criteria for Dry Days**

Number of Prior Days	Cumulative Antecedent Rain (Inches)
1	0.1
3	0.4
5	1.0

In addition, dry days with total flows that are 15 percent higher or lower than the average volume of all dry days were excluded from the analysis. Next the dry day traces for each meter were edited to remove any outliers that may have passed through the filtering



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requirements. Finally, Sliicer calculated the Average Dry Flow (ADF) from all the traces.

### 3.3.2 Dry Day Groups

The dry-day groups used were Weekdays, Saturdays and Sundays. The weekdays included Mondays through Fridays. Initially, Saturdays and Sundays were by default combined into a Weekends group, but upon close inspection it was determined that Saturdays and Sundays exhibited a distinctly different diurnal pattern.

### 3.3.3 Season Groups

The seasons used for the study were Eastern Daylight Saving Time (DST) and Eastern Standard Time (EST). Three groups were established within the monitoring period, Summer 2006, Winter 2007 and Summer 2007, and are defined as follows:

- Summer 2006: 05/09/2006 – 10/28/2006
- Winter 2007: 10/29/2006 – 03/10/2007
- Summer 2007: 03/11/2007 – 05/18/2007

### 3.3.4 Waste Water Production and Base Infiltration Components

The wastewater production (WWP) was calculated by subtracting the base infiltration (BI) from the average dry flow (ADF). As required, the Stevens-Schutzbach Method was used to determine the base infiltration for most meter basins. The Stevens-Schutzbach Method is as follows:

$$\text{BaseInfiltration} = \frac{0.4 \times \text{MDF}}{\left(1 - \left(0.6 \times \left(\frac{\text{MDF}}{\text{ADF}}\right)^{\left(\frac{\text{MDF}}{\text{ADF}}\right)^{0.7}}\right)\right)}$$

Where: MDF = minimum dry flow

For basins that exhibited negative net infiltration, two other alternative calculation methods were used as follows:

#### Alternative Method 1:

$\text{Base Sanitary Flow} = (\text{ADF} - \text{MDF})/P$  where P = a percentage chosen on a site specific basis (typically 88% by default)

Then,  $\text{Base Infiltration} = \text{ADF} - \text{Base Sanitary Flow}$

#### Alternative Method 2:

$\text{Base Sanitary Flow} = P \times \text{ADF}$  where again P was a percentage chosen on a site specific basis, typically around 50%.

Then,  $\text{Base Infiltration} = \text{ADF} - \text{Base Sanitary Flow}$



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Table 4-1 presents the results of the dry-weather analysis.

### 3.3.5 Base Infiltration Normalization by IDM

Normalizing BI is important when comparing basins with severe infiltration problems. Simply looking at infiltration rates does not always lead to the right conclusion about the location of the worst problems in the collection system. For this project, BI was normalized based on inch-diameter-miles (IDM). The IDM normalization was selected for BI because it takes into account not only the length, but also the diameter of the pipes in the basin. Regardless of the length, the larger the pipe diameter the more pipe surface is exposed to groundwater. Sliicer provides this type of BI normalization for each basin.

## 3.4 Wet Weather Analysis

### 3.4.1 Global Storms

A total of 29 storms during the metering period met the criteria for a storm event as defined by the global setting. The dates of these storms are listed in Table 2-2. Each storm was analyzed for each flow meter using the Sliicer.com software.

### 3.4.2 Pre-Compensation Period

For each storm, a pre-compensation period (typically 24 hours prior to the storm event) was established to adjust the dry day hydrograph to match the actual hydrograph immediately prior to the start of the storm. This either raises or lowers the dry day hydrograph so that the calculated rainfall-dependent infiltration and inflow (RDII) is a result of the storm event only.

### 3.4.3 Storm Measurement Periods

Sliicer.com calculates I&I for three periods following the start of the storm. They are called Storm, Recovery 1 and Recovery 2. Each period by default is 24 hours long which is set by the global settings. For this project, however, the storm periods were set by the City, are specific for each storm, and are long enough to capture all the RDII. The recovery periods 1 and 2 were set to 60 minutes, but are not used in any calculations.

### 3.4.4 RDII Calculations

In order to estimate the RDII, Sliicer over-imposes the typical dry-day hydrograph on the storm hydrograph. The difference between the two hydrographs represents the RDII.

### 3.4.5 RDII Normalization

#### 3.4.5.1 By Linear Footage

Normalizing the RDII is extremely important when comparing results to find the worst basins. Simply looking for the most raw wet weather flow does not always lead to the right conclusion about the location of the worst I&I problems in the collection system. Although raw I&I information is part of the picture, it needs to be correlated with basin size and rainfall information before it becomes useful. For this project, RDII was



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normalized based on linear footage (mg/l.f./in-of-rain). Sliicer provides this type of normalization for each meter for each storm. The average of all storms was then calculated.

### 3.4.5.2 By Area (Capture Coefficient)

A graphical technique for evaluating and comparing the performance of sewershed basins under widely varying rain events is the Q vs. I diagram. “Q” is the calculated I&I for a storm and “I” is the corresponding rainfall. The slope (S) of the regression line on the Q vs. I plot was used in the following equation to obtain the capture coefficient (R).

$$R = (36.83 \text{ (acres-in/mg)} * S \text{ (mg/in)}) / \text{Area (acres)}$$

The capture coefficient represents the percentage of the volume of rain water that fell on the basin that found its way into the collection system. Plots of the Q vs. I diagrams for each flow meter are provided in the CD attached to this report.

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### 4.0 Evaluation Results

#### 4.1 Dry Day Results

Base infiltration is defined as a portion of dry weather flow in a sewer that results from groundwater leaking into the pipe through joints, cracks and other defects in manholes and the pipe itself. The magnitude of infiltration is dependent on the groundwater elevation as well as the quantity and severity of defects. Tables 4-1 through 4-3 present the base infiltration computed in Sliicer for each meter sub-basin. Tables 4-1 through 4-3 show results for weekdays and for Summer 2006, Winter 2007 and Summer 2007, respectively. The values are presented as a flow rate (mgd) as well as in gallons per day per inch-mile (gpdim). The latter metric allows comparison between sub-basins of differing sizes, population and land uses, as it normalizes the flow rates based on the size and length of sewer pipe in the tributary area. Appendix A contains more detailed tables presenting the results of the base infiltration calculation for all day groups and seasons.

For the Winter 2007 season, the calculated base infiltration rates ranged from 0 GPDIM to almost 25,000 GPDIM. Seventeen sub-basins had infiltration values above 5,000 GPDIM, which is a common comparison level for typical sanitary sewer systems. Sub-basins with values above this level may require further attention. High base infiltration rates not only result in wasted funds when the flow is eventually treated, but also occupies valuable hydraulic capacity in the sewer during wet weather events.

Examination of the other seasons indicated that the sites with the highest base infiltration were found in the top tiers of both the Summer 2006 and Summer 2007 lists as well. This demonstrates that the relative magnitude of base infiltration among meter basins is fairly consistent throughout the seasons.

Figure 4-1 illustrates the relative severity of the base infiltration throughout the Low Level Sewershed for the Winter 2007 season. The various colors of the meter basins correspond to a range of base infiltration in GPDIM.

#### 4.2 Wet Weather Results

Tables 4-4 and 4-5 summarize the RDII quantities for each of the 29 storm events observed during the monitoring period based on season. Table 4-4 presents the Winter 2007 RDII quantities based on volume of RDII normalized by rain and length of sewer (gallons per inch per foot) and also the capture coefficient (% capture of rainfall into the sewer system). Table 4-5 presents the seasonal average RDII quantities based on volume of RDII normalized by rain and length of sewer (gallons per inch per foot) and also the capture coefficient (% capture of rainfall into the sewer system). Values in these tables were extracted from Sliicer via the “NetIIVolStorm” parameter. Both values are indicative of the severity of RDII in the sewer system. Meter sub-basins are sorted by severity of RDII.



## Inflow/Infiltration Report

Upon examination of the results, no matter which metric is used to identify the severity of RDII in the system, the same six meter sub-basins fell within the top eight spots as being the most problematic. These are meter sub-basins LL20, LL25/LL29, LL01/LL02, LL22, LL03/LL04/LL04A, and LL29A. The average volume per length of sewer ranged from 2 to 193 gal/in<sup>2</sup>\*ft. This metric as well as the capture coefficient calculation are internally normalized by rainfall and basin size, thus reducing the potential bias to storm event size.

It should be noted that meter sub-basin LL20 had a capture coefficient value greater than 100%, which was not expected. This may be due to the possibility that the observed rainfall data collected for certain storms were less than the actual rainfall that fell on the sub-basin. Thus, lower rain values in the denominator of the normalized calculation led to higher than expected capture coefficient values. Another potential reason for the high capture coefficient values may be the inaccuracy of the flow data at this site. Upon close inspection of the flow patterns at LL20 it was observed that the relative magnitude of flows decreased considerably from 2006 to 2007. In addition, this meter is located just upstream of the Eastern Avenue Pump Station, possibly leading to inaccurate flow metering results. Inspection of the next upstream meter, LL22, revealed more consistent flow behavior, further supporting the suspicion of the data at LL20. Thus, the high flows recorded at LL20 in 2006 may have skewed the RDII calculation, leading to the higher than expected capture coefficient.

Figure 4-2 illustrates the relative severity of the RDII throughout the Low Level Sewershed based on the seasonal average values computed in Slicer. The various colors of the meter basins correspond to a range of RDII capture coefficient values.

**Table 4-1**  
**Dry Weather Analysis**  
**DST - Summer 2006 - Weekdays Only**

Basin	A <sub>gross</sub> (acres)	A <sub>net</sub> (acres)	A <sub>net</sub> /A <sub>gross</sub> (%)	IDM (in-dia-mile)	ADF <sub>gross</sub> (MGD)	ADF <sub>net</sub> (MGD)	Q <sub>net</sub> /Q <sub>gross</sub> (%)	WWP <sub>net</sub> (MGD)	BI <sub>net</sub> (MGD)	BI Severity (gpd/idm)	BI Rate (%)	WWP Rate (gal/l.f.)
LL19	158.3	158.3	100.0%	65.7	1.985	1.985	100.0%	0.486	1.499	22815.8	72.5%	13.4
LL18	85.5	85.5	100.0%	44.2	3.142	1.156	35.4%	0.255	0.901	20384.6	79.7%	11.7
LL24	75.9	75.9	100.0%	33.6	0.974	0.974	100.0%	0.348	0.627	18660.7	67.6%	18.4
LL17	82.8	82.8	100.0%	46.8	0.847	0.847	100.0%	0.147	0.700	14957.3	123.0%	5.1
LL34	381.3	87.5	22.9%	44.1	2.174	1.091	52.8%	0.534	0.557	12630.4	45.2%	24.2
LL14	417.9	417.9	100.0%	39.4	0.550	0.550	100.0%	0.084	0.466	11827.4	79.1%	4.4
LL30	136.7	75.9	55.6%	42.9	0.911	0.587	73.1%	0.116	0.470	10955.7	58.5%	4.6
LL37	85.4	85.4	100.0%	37.9	0.487	0.487	100.0%	0.138	0.349	9208.4	71.2%	6.1
LL21	150.3	150.3	100.0%	65.4	1.137	1.137	100.0%	0.605	0.532	8134.6	46.6%	17.5
LL38	2347.0	447.9	19.1%	62.9	4.417	0.572	8.7%	0.073	0.500	7949.1	152.4%	3.3
LL23	196.0	120.2	61.3%	60.3	1.606	0.631	31.1%	0.179	0.452	7495.9	108.1%	6.2
LL38A	2264.5	353.9	15.6%	86.3	3.682	0.650	7.5%	0.038	0.612	7091.5	243.8%	1.5
LL46	52.7	52.7	100.0%	13.4	0.220	0.220	100.0%	0.129	0.091	6791.0	41.6%	14.8
LL44	190.4	190.4	100.0%	75.1	0.627	0.627	100.0%	0.122	0.505	6724.4	73.0%	2.7
LL16	148.4	65.6	44.2%	33.4	1.275	0.428	47.2%	0.210	0.218	6526.9	42.8%	12.5
LL27	694.0	319.3	46.0%	51.9	1.618	0.461	23.7%	0.138	0.323	6223.5	72.6%	5.1
LLS11	82.5	82.5	100.0%	18.4	0.162	0.162	100.0%	0.056	0.106	5760.9	107.1%	5.3
LL03/LL04/LL04A*	2009.8	222.0	11.0%	137.9	4.901	1.333	26.2%	0.541	0.792	5743.3	55.7%	8.5
LL42	415.6	122.4	29.4%	37.5	0.952	0.472	29.2%	0.263	0.209	5573.3	85.7%	13.2
LL45	204.0	204.0	100.0%	32.5	0.208	0.208	100.0%	0.061	0.147	4523.1	67.4%	3.0
LL11	102.1	102.1	100.0%	41.8	0.389	0.389	100.0%	0.211	0.179	4282.3	51.7%	7.9
LL31	60.7	60.7	100.0%	30.4	0.325	0.325	100.0%	0.195	0.130	4276.3	43.9%	10.4
LL08/LL09*	269.5	269.5	100.0%	68.8	0.577	0.577	100.0%	0.289	0.288	4186.0	49.0%	7.6
LL33	83.6	83.6	100.0%	34.9	0.224	0.224	100.0%	0.078	0.146	4183.4	75.3%	4.1
LL28	374.7	374.7	100.0%	56.4	1.157	1.157	100.0%	0.926	0.231	4095.7	16.1%	34.3
LL07	98.9	98.9	100.0%	54.2	0.440	0.440	100.0%	0.226	0.214	3948.3	49.9%	6.8
LL36	109.6	109.6	100.0%	48.7	0.279	0.279	100.0%	0.116	0.163	3347.0	55.4%	4.0
LL26	811.5	117.5	14.5%	53.3	1.959	0.341	3.5%	0.165	0.176	3302.1	255.1%	6.8
LL35	293.9	98.9	33.7%	46.5	1.083	0.317	28.9%	0.182	0.136	2924.7	42.8%	7.1
LL40	253.1	253.1	100.0%	50.0	0.293	0.293	100.0%	0.149	0.144	2880.0	41.1%	4.8
LL05	94.3	94.3	100.0%	31.2	0.263	0.263	100.0%	0.174	0.089	2852.6	33.3%	8.8
LL47	282.7	282.7	100.0%	57.8	0.251	0.251	100.0%	0.093	0.158	2733.6	45.1%	3.0
LL10	1093.5	175.2	16.0%	83.1	1.845	0.258	23.2%	0.046	0.212	2551.1	40.9%	1.3
LL12	398.3	197.9	49.7%	68.0	0.647	0.339	67.8%	0.195	0.144	2117.6	27.3%	6.2
LL39	765.3	196.9	25.7%	54.0	0.774	0.217	16.9%	0.103	0.114	2111.1	86.4%	3.7
LL32	450.4	450.4	100.0%	81.0	0.364	0.364	100.0%	0.200	0.165	2037.0	43.4%	4.9
LL20	5526.9	116.7	2.1%	90.5	13.162	0.753	10.1%	0.579	0.174	1922.7	13.1%	21.4
LL41	315.3	315.3	100.0%	73.7	0.264	0.264	100.0%	0.137	0.127	1723.2	42.2%	3.2
LL13	200.4	200.4	100.0%	50.9	0.308	0.308	100.0%	0.237	0.071	1394.9	28.2%	8.3
LL01/LL02*	2222.4	212.7	9.6%	144.7	5.846	0.945	10.5%	0.745	0.200	1382.2	31.8%	14.6
LL43	293.2	293.2	100.0%	57.6	0.480	0.480	100.0%	0.411	0.069	1197.9	11.7%	11.5
LL06	600.0	231.6	38.6%	71.9	1.459	0.442	32.1%	0.463	0.000	0.0	0.0%	13.3
LL15	242.4	94.0	38.8%	53.0	1.503	0.228	34.9%	0.313	0.000	0.0	0.0%	10.6
LL22	5259.9	112.7	2.1%	64.4	11.272	0.606	3.4%	0.398	0.000	0.0	0.0%	16.1
LL25/LL29*	4951.2	185.9	3.8%	114.4	9.097	0.000	0.4%	0.117	0.000	0.0	0.0%	3.4
LL29A	3953.8	106.9	2.7%	62.3	8.070	0.131	6.3%	0.019	0.000	0.0	0.0%	1.1

\*Meter tributary areas were combined for the I/I analysis to overcome the erratic influence of the Eastern Ave Pump Station

**Table 4-2**  
**Dry Weather Analysis**  
**DST - Winter 2007 - Weekdays Only**

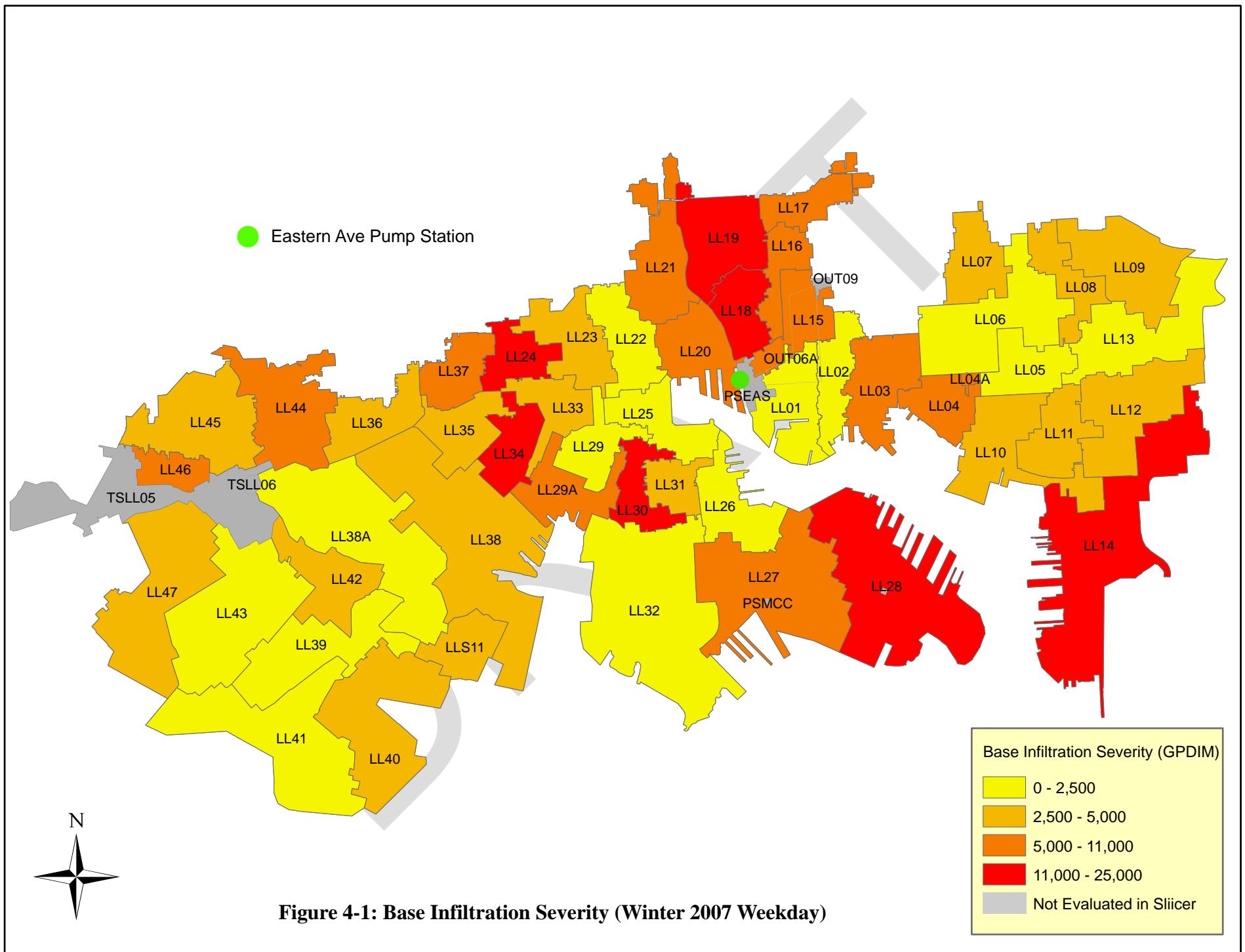
Basin	A <sub>gross</sub> (acres)	A <sub>net</sub> (acres)	A <sub>net</sub> /A <sub>gross</sub> (%)	IDM (in-dia-mile)	ADF <sub>gross</sub> (MGD)	ADF <sub>net</sub> (MGD)	Q <sub>net</sub> /Q <sub>gross</sub> (%)	WWP <sub>net</sub> (MGD)	BI <sub>net</sub> (MGD)	BI Severity (gpd/idm)	BI Rate (%)	WWP Rate (gal/l.f.)
LL19	158.3	158.3	100.0%	65.7	2.068	2.068	100.0%	0.432	1.636	24901.1	82.4%	11.9
LL18	85.5	85.5	100.0%	44.2	3.199	1.131	36.8%	0.340	0.791	17895.9	68.4%	15.5
LL34	381.3	87.5	22.9%	44.1	2.334	1.232	50.2%	0.444	0.788	17868.5	72.2%	20.1
LL24	75.9	75.9	100.0%	33.6	0.927	0.927	100.0%	0.345	0.582	17321.4	59.8%	18.2
LL30	136.7	75.9	55.6%	42.9	1.100	0.804	64.4%	0.192	0.611	14242.4	104.1%	7.6
LL14	417.9	417.9	100.0%	39.4	0.589	0.589	100.0%	0.133	0.456	11573.6	82.9%	7.0
LL20*	5526.9	116.7	2.1%	90.5	13.162	1.325	5.7%	0.362	0.963	10640.9	127.9%	13.4
LL37	85.4	85.4	100.0%	37.9	0.490	0.490	100.0%	0.138	0.352	9287.6	72.3%	6.1
LL17	82.8	82.8	100.0%	46.8	0.569	0.569	100.0%	0.148	0.421	8995.7	49.7%	5.1
LL29A	3953.8	106.9	2.7%	62.3	8.207	0.514	1.6%	0.014	0.500	8025.7	381.7%	0.8
LL46	52.7	52.7	100.0%	13.4	0.219	0.219	100.0%	0.112	0.107	7985.1	48.6%	12.9
LL21	150.3	150.3	100.0%	65.4	1.142	1.142	100.0%	0.649	0.493	7538.2	43.4%	18.8
LL44	190.4	190.4	100.0%	75.1	0.692	0.692	100.0%	0.131	0.561	7470.0	89.5%	2.9
LL27	694.0	319.3	46.0%	51.9	1.879	0.445	28.5%	0.060	0.385	7418.1	83.5%	2.2
LL28	374.7	374.7	100.0%	56.4	1.434	1.434	100.0%	1.072	0.363	6436.2	31.4%	39.7
LL15	242.4	94.0	38.8%	53.0	1.657	0.579	15.2%	0.299	0.280	5283.0	122.8%	10.2
LL03/LL04/LL04A*	2009.8	222.0	11.0%	137.9	5.420	1.422	27.2%	0.704	0.719	5213.9	53.9%	11.0
LL16	148.4	65.6	44.2%	33.4	1.079	0.509	33.6%	0.638	0.159	4760.5	37.1%	37.9
LL08/LL09*	269.5	269.5	100.0%	68.8	0.588	0.588	100.0%	0.274	0.314	4564.0	54.4%	7.2
LL45	204.0	204.0	100.0%	32.5	0.218	0.218	100.0%	0.072	0.146	4492.3	70.2%	3.5
LL12	398.3	197.9	49.7%	68.0	0.779	0.528	52.4%	0.227	0.300	4411.8	88.5%	7.2
LL23	196.0	120.2	61.3%	60.3	1.344	0.418	39.3%	0.153	0.264	4378.1	41.8%	5.3
LL10	1093.5	175.2	16.0%	83.1	2.233	0.518	14.0%	0.169	0.350	4211.8	135.7%	4.6
LL47	282.7	282.7	100.0%	57.8	0.350	0.350	100.0%	0.113	0.238	4117.6	94.8%	3.6
LL38	2347.0	447.9	19.1%	62.9	3.761	0.328	12.9%	0.071	0.257	4085.9	44.9%	3.3
LL07	98.9	98.9	100.0%	54.2	0.429	0.429	100.0%	0.216	0.213	3929.9	48.4%	6.5
LL31	60.7	60.7	100.0%	30.4	0.296	0.296	100.0%	0.179	0.117	3848.7	36.0%	9.6
LL36	109.6	109.6	100.0%	48.7	0.294	0.294	100.0%	0.109	0.185	3798.8	66.3%	3.7
LL42	415.6	122.4	29.4%	37.5	0.835	0.244	49.6%	0.106	0.138	3680.0	29.2%	5.3
LL40	253.1	253.1	100.0%	50.0	0.350	0.350	100.0%	0.179	0.171	3420.0	58.4%	5.8
LLS11	82.5	82.5	100.0%	18.4	0.099	0.099	100.0%	0.041	0.058	3152.2	35.8%	3.9
LL33	83.6	83.6	100.0%	34.9	0.194	0.194	100.0%	0.086	0.108	3094.6	48.2%	4.5
LL35	293.9	98.9	33.7%	46.5	1.102	0.318	29.3%	0.182	0.136	2924.7	42.9%	7.1
LL11	102.1	102.1	100.0%	41.8	0.346	0.346	100.0%	0.240	0.106	2535.9	27.2%	9.0
LL38A	2264.5	353.9	15.6%	86.3	3.335	0.251	17.7%	0.033	0.205	2375.4	31.5%	1.3
LL05	94.3	94.3	100.0%	31.2	0.267	0.267	100.0%	0.197	0.070	2243.6	26.6%	10.0
LL13	200.4	200.4	100.0%	50.9	0.252	0.252	100.0%	0.146	0.106	2082.5	34.4%	5.1
LL43	293.2	293.2	100.0%	57.6	0.592	0.592	100.0%	0.479	0.113	1961.8	23.5%	13.4
LL32	450.4	450.4	100.0%	81.0	0.380	0.380	100.0%	0.232	0.148	1827.2	40.7%	5.7
LL41	315.3	315.3	100.0%	73.7	0.301	0.301	100.0%	0.167	0.134	1818.2	50.8%	3.9
LL01/LL02*	2222.4	212.7	9.6%	144.7	6.004	0.628	16.2%	0.347	0.237	1637.9	25.1%	6.8
LL06	600.0	231.6	38.6%	71.9	1.497	0.480	30.3%	0.428	0.052	723.2	11.8%	12.3
LL39	765.3	196.9	25.7%	54.0	0.783	0.132	28.0%	0.102	0.030	555.6	13.8%	3.6
LL26	811.5	117.5	14.5%	53.3	1.948	0.069	17.4%	0.045	0.024	450.3	7.0%	1.9
LL22	5259.9	112.7	2.1%	64.4	10.695	0.368	5.4%	0.575	0.000	0.0	0.0%	23.2
LL25/LL29*	4951.2	185.9	3.8%	114.4	9.161	0.035	0.0%	0.139	0.000	0.0	--	4.1

\*Meter tributary areas were combined for the I/I analysis to overcome the erratic influence of the Eastern Ave Pump Station

**Table 4-3**  
**Dry Weather Analysis**  
**DST - Summer 2007 - Weekdays Only**

Basin	A <sub>gross</sub> (acres)	A <sub>net</sub> (acres)	A <sub>net</sub> /A <sub>gross</sub> (%)	IDM (in-dia-mile)	ADF <sub>gross</sub> (MGD)	ADF <sub>net</sub> (MGD)	Q <sub>net</sub> /Q <sub>gross</sub> (%)	WWP <sub>net</sub> (MGD)	BI <sub>net</sub> (MGD)	BI Severity (gpd/idm)	BI Rate (%)	WWP Rate (gal/l.f.)
LL19	158.3	158.3	100.0%	65.7	2.054	2.054	100.0%	0.440	1.614	24566.2	78.6%	12.1
LL24	75.9	75.9	100.0%	33.6	0.927	0.927	100.0%	0.324	0.603	17946.4	65.0%	17.1
LL23	196.0	120.2	61.3%	60.3	2.248	1.321	58.8%	0.305	1.016	16849.1	76.9%	10.5
LL18	85.5	85.5	100.0%	44.2	3.062	1.008	32.9%	0.313	0.695	15724.0	68.9%	14.3
LL34	381.3	87.5	22.9%	44.1	2.341	1.160	49.6%	0.527	0.633	14353.7	54.6%	23.9
LL30	136.7	75.9	55.6%	42.9	1.101	0.807	73.3%	0.202	0.605	14102.6	75.0%	8.0
LL28	374.7	374.7	100.0%	56.4	1.308	1.308	100.0%	0.650	0.658	11666.7	50.3%	24.1
LL37	85.4	85.4	100.0%	37.9	0.560	0.560	100.0%	0.149	0.411	10844.3	73.4%	6.6
LL14	417.9	417.9	100.0%	39.4	0.533	0.533	100.0%	0.128	0.405	10279.2	76.0%	6.8
LL16	148.4	65.6	44.2%	33.4	1.003	0.576	57.4%	0.236	0.340	10179.6	59.0%	14.0
LL01/LL02*	2222.4	212.7	9.6%	144.7	7.092	1.622	22.9%	0.446	1.176	8127.2	72.5%	8.7
LL44	190.4	190.4	100.0%	75.1	0.669	0.669	100.0%	0.114	0.555	7390.1	83.0%	2.5
LL46	52.7	52.7	100.0%	13.4	0.211	0.211	100.0%	0.112	0.099	7388.1	46.9%	12.9
LL38	2347.0	447.9	19.1%	62.9	4.139	0.612	14.8%	0.149	0.463	7360.9	75.7%	6.8
LLS11	82.5	82.5	100.0%	18.4	0.164	0.164	100.0%	0.031	0.133	7228.3	81.1%	2.9
LL21	150.3	150.3	100.0%	65.4	1.123	1.123	100.0%	0.652	0.471	7201.8	41.9%	18.9
LL17	82.8	82.8	100.0%	46.8	0.427	0.427	100.0%	0.101	0.326	6965.8	76.3%	3.5
LL15	242.4	94.0	38.8%	53.0	1.714	0.710	41.4%	0.381	0.329	6207.5	46.3%	12.9
LL42	415.6	122.4	29.4%	37.5	0.934	0.360	38.5%	0.131	0.229	6106.7	63.6%	6.6
LL29A	3953.8	106.9	2.7%	62.3	8.593	0.419	4.9%	0.042	0.377	6051.4	90.0%	2.5
LL45	204.0	204.0	100.0%	32.5	0.248	0.248	100.0%	0.059	0.189	5815.4	76.2%	2.9
LL10	1093.5	175.2	16.0%	83.1	2.361	0.600	25.4%	0.144	0.456	5487.4	76.0%	3.9
LL36	109.6	109.6	100.0%	48.7	0.366	0.366	100.0%	0.112	0.254	5215.6	69.4%	3.8
LL12	398.3	197.9	49.7%	68.0	0.873	0.489	56.0%	0.139	0.350	5147.1	71.6%	4.4
LL03/LL04/LL04A*	2009.8	222.0	11.0%	137.9	5.490	1.248	22.7%	0.607	0.641	4648.3	51.4%	9.5
LL20	5526.9	116.7	2.1%	90.5	13.162	0.895	6.8%	0.509	0.386	4265.2	43.1%	18.8
LL27	694.0	319.3	46.0%	51.9	1.740	0.431	24.8%	0.220	0.211	4065.5	49.0%	8.1
LL33	83.6	83.6	100.0%	34.9	0.233	0.233	100.0%	0.095	0.138	3954.2	59.2%	5.0
LL31	60.7	60.7	100.0%	30.4	0.293	0.293	100.0%	0.174	0.119	3914.5	40.6%	9.3
LL40	253.1	253.1	100.0%	50.0	0.372	0.372	100.0%	0.186	0.186	3720.0	50.0%	6.0
LL47	282.7	282.7	100.0%	57.8	0.311	0.311	100.0%	0.113	0.198	3425.6	63.7%	3.6
LL07	98.9	98.9	100.0%	54.2	0.400	0.400	100.0%	0.216	0.184	3394.8	46.0%	6.5
LL11	102.1	102.1	100.0%	41.8	0.355	0.355	100.0%	0.220	0.135	3229.7	38.0%	8.2
LL08/LL09*	269.5	269.5	100.0%	68.8	0.422	0.422	100.0%	0.216	0.206	2994.2	48.8%	5.7
LL06	600.0	231.6	38.6%	71.9	1.604	0.782	48.8%	0.598	0.184	2559.1	23.5%	17.1
LL32	450.4	450.4	100.0%	81.0	0.376	0.376	100.0%	0.182	0.194	2395.1	51.6%	4.4
LL05	94.3	94.3	100.0%	31.2	0.277	0.277	100.0%	0.203	0.074	2371.8	26.7%	10.3
LL13	200.4	200.4	100.0%	50.9	0.384	0.384	100.0%	0.273	0.111	2180.7	28.9%	9.6
LL41	315.3	315.3	100.0%	73.7	0.303	0.303	100.0%	0.159	0.144	1953.9	47.5%	3.7
LL43	293.2	293.2	100.0%	57.6	0.574	0.574	100.0%	0.466	0.108	1875.0	18.8%	13.0
LL38A	2264.5	353.9	15.6%	86.3	3.364	0.161	4.8%	0.022	0.139	1610.7	86.3%	0.9
LL35	293.9	98.9	33.7%	46.5	1.180	0.255	21.6%	0.181	0.074	1591.4	29.0%	7.1
LL39	765.3	196.9	25.7%	54.0	0.852	0.177	20.8%	0.095	0.082	1518.5	46.3%	3.4
LL26	811.5	117.5	14.5%	53.3	1.819	0.092	5.1%	0.040	0.053	994.4	57.6%	1.7
LL22	5259.9	112.7	2.1%	64.4	11.291	0.185	1.6%	0.463	0.000	0.0	0.0%	18.7
LL25/LL29*	4951.2	185.9	3.8%	114.4	9.210	0.003	0.0%	0.118	0.000	0.0	0.0%	3.5

\*Meter tributary areas were combined for the I/I analysis to overcome the erratic influence of the Eastern Ave Pump Station



**Table 4-4**  
**Wet Weather Analysis - Winter 2007 RDII**

Basin	RDII (gal/l.f. - in)	Capture Coefficient (R)
LL01/LL02*	59.2	52.4
LL03/LL04/LL04A*	16.6	17.6
LL05	9.1	7.0
LL06	12.9	7.2
LL07	6.4	7.9
LL08/LL09*	4.7	2.4
LL10	9.5	7.3
LL11	6.7	6.5
LL12	8.8	5.1
LL13	4.9	2.6
LL14	13.4	2.2
LL15	11.1	12.8
LL16	7.8	7.3
LL17	7.3	9.3
LL18	24.3	23.0
LL19	10.1	8.5
LL20	365.3	312.4
LL21	6.6	5.6
LL22	54.0	43.8
LL23	2.5	2.2
LL24	3.6	3.3
LL25/LL29*	68.6	46.4
LL26	11.2	8.5
LL27	7.5	2.4
LL28	28.2	7.5
LL29A	37.5	21.4
LL30	11.3	13.9
LL31	7.9	9.0
LL32	5.0	1.7
LL33	5.1	4.3
LL34	8.4	7.8
LL35	5.6	5.3
LL36	12.5	12.3
LL37	8.4	8.2
LL38	32.5	5.8
LL38A	31.1	8.9
LL39	6.1	3.2
LL40	9.3	4.2
LL41	4.1	2.1
LL42	12.7	7.6
LL43	3.9	1.8
LL44	6.8	5.9
LL45	7.7	2.8
LL46	13.5	8.2
LL47	7.7	3.1
LL48/LL09*	4.7	2.4
LL49	4.1	2.1
LL50	3.9	1.8
LL51	10.8	5.1

Basin	RDII (gal/l.f. - in)	Capture Coefficient (R)
LL20	365.3	312.4
LL25/LL29*	68.6	46.4
LL01/LL02*	59.2	52.4
LL22	54.0	43.8
LL29A	37.5	21.4
LL38	32.5	5.8
LL38A	31.1	8.9
LL28	28.2	7.5
LL18	24.3	23.0
LL03/LL04/LL04A*	16.6	17.6
LL46	13.5	8.2
LL14	13.4	2.2
LL06	12.9	7.2
LL42	12.7	7.6
LL36	12.5	12.3
LL30	11.3	13.9
LL26	11.2	8.5
LL15	11.1	12.8
LLS11	10.8	5.1
LL19	10.1	8.5
LL10	9.5	7.3
LL40	9.3	4.2
LL05	9.1	7.0
LL12	8.8	5.1
LL34	8.4	7.8
LL37	8.4	8.2
LL31	7.9	9.0
LL16	7.8	7.3
LL45	7.7	2.8
LL47	7.7	3.1
LL27	7.5	2.4
LL17	7.3	9.3
LL44	6.8	5.9
LL11	6.7	6.5
LL21	6.6	5.6
LL07	6.4	7.9
LL39	6.1	3.2
LL35	5.6	5.3
LL33	5.1	4.3
LL32	5.0	1.7
LL13	4.9	2.6
LL08/LL09*	4.7	2.4
LL41	4.1	2.1
LL43	3.9	1.8
LL24	3.6	3.3
LL23	2.5	2.2

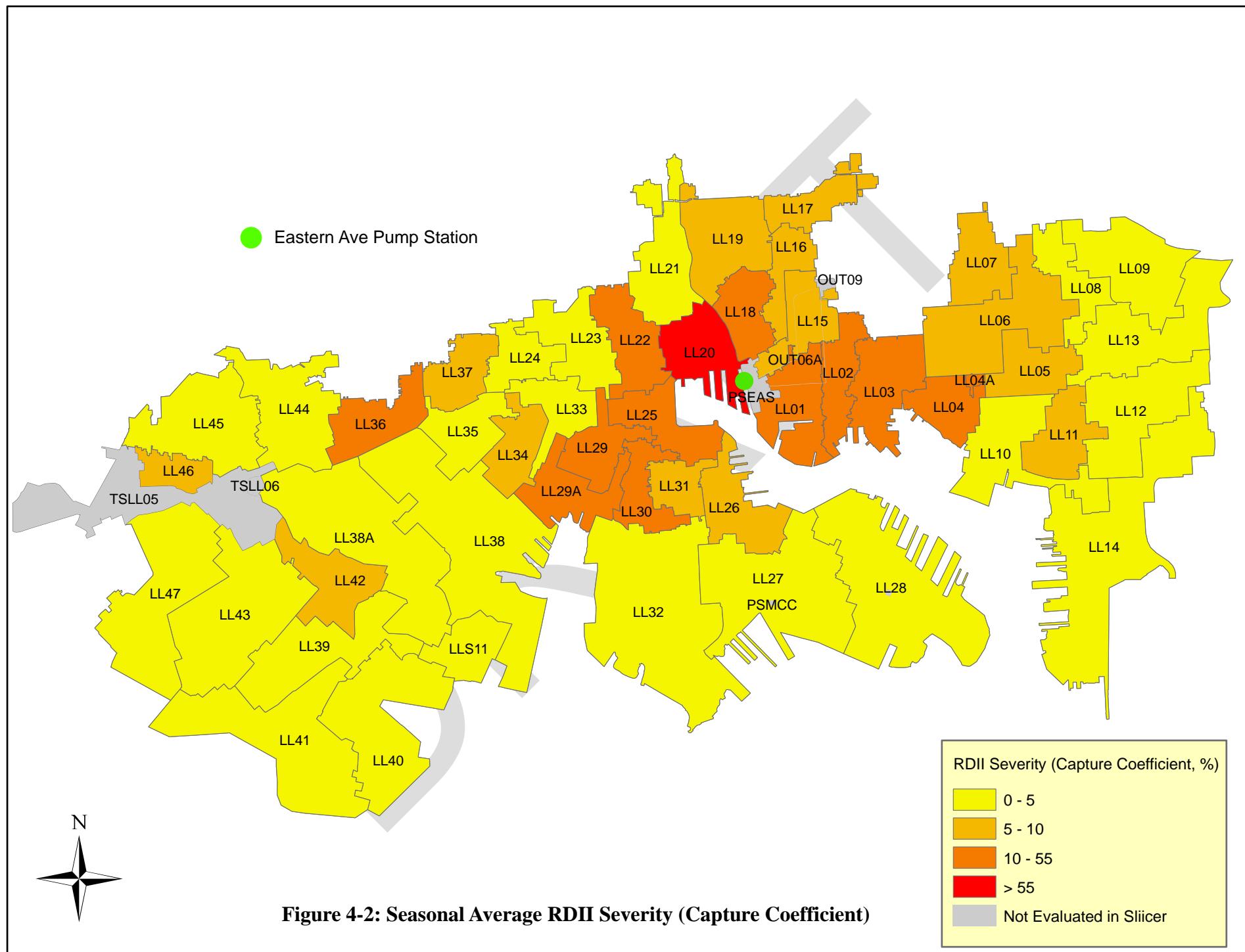
\*Meter tributary areas were combined for the I/I analysis to overcome the erratic influence of the Eastern Ave Pump Station

**Table 4-5**  
**Wet Weather Analysis - Seasonal Average RDII**

Basin	RDII (gal/l.f. - in)	Capture Coefficient (R)
LL01/LL02*	53.6	47.4
LL03/LL04/LL04A*	20.5	21.8
LL05	8.2	6.3
LL06	12.2	6.8
LL07	5.8	7.2
LL08/LL09*	5.4	2.8
LL10	4.8	3.7
LL11	6.1	5.9
LL12	7.7	4.5
LL13	4.5	2.4
LL14	28.2	4.7
LL15	8.7	10.0
LL16	8.3	7.8
LL17	5.2	6.7
LL18	19.4	18.3
LL19	8.4	7.1
LL20	192.9	165.0
LL21	4.7	4.0
LL22	43.9	35.6
LL23	2.4	2.1
LL24	3.5	3.3
LL25/LL29*	80.2	54.3
LL26	10.6	8.1
LL27	14.1	4.4
LL28	17.9	4.7
LL29A	33.4	19.0
LL30	9.6	11.7
LL31	6.7	7.6
LL32	3.6	1.2
LL33	4.2	3.5
LL34	7.6	7.1
LL35	4.9	4.6
LL36	10.5	10.4
LL37	5.8	5.7
LL38	21.8	3.9
LL38A	17.5	5.0
LL39	4.6	2.4
LL40	6.5	2.9
LL41	3.8	1.9
LL42	11.5	6.9
LL43	4.5	2.0
LL44	5.5	4.8
LL45	5.9	2.2
LL46	10.3	6.3
LL47	6.7	2.7
LL51	7.6	3.6
LL31	6.7	7.6
LL47	6.7	2.7
LL40	6.5	2.9
LL11	6.1	5.9
LL45	5.9	2.2
LL07	5.8	7.2
LL37	5.8	5.7
LL44	5.5	4.8
LL08/LL09*	5.4	2.8
LL17	5.2	6.7
LL35	4.9	4.6
LL10	4.8	3.7
LL21	4.7	4.0
LL39	4.6	2.4
LL13	4.5	2.4
LL43	4.5	2.0
LL33	4.2	3.5
LL41	3.8	1.9
LL32	3.6	1.2
LL24	3.5	3.3
LL23	2.4	2.1

Basin	RDII (gal/l.f. - in)	Capture Coefficient (R)
LL20	192.9	165.0
LL25/LL29*	80.2	54.3
LL01/LL02*	53.6	47.4
LL22	43.9	35.6
LL29A	33.4	19.0
LL14	28.2	4.7
LL38	21.8	3.9
LL03/LL04/LL04A*	20.5	21.8
LL18	19.4	18.3
LL28	17.9	4.7
LL38A	17.5	5.0
LL27	14.1	4.4
LL06	12.2	6.8
LL42	11.5	6.9
LL26	10.6	8.1
LL36	10.5	10.4
LL46	10.3	6.3
LL30	9.6	11.7
LL15	8.7	10.0
LL19	8.4	7.1
LL16	8.3	7.8
LL05	8.2	6.3
LL12	7.7	4.5
LL34	7.6	7.1
LL51	7.6	3.6
LL31	6.7	7.6
LL47	6.7	2.7
LL40	6.5	2.9
LL11	6.1	5.9
LL45	5.9	2.2
LL07	5.8	7.2
LL37	5.8	5.7
LL44	5.5	4.8
LL08/LL09*	5.4	2.8
LL17	5.2	6.7
LL35	4.9	4.6
LL10	4.8	3.7
LL21	4.7	4.0
LL39	4.6	2.4
LL13	4.5	2.4
LL43	4.5	2.0
LL33	4.2	3.5
LL41	3.8	1.9
LL32	3.6	1.2
LL24	3.5	3.3
LL23	2.4	2.1

\*Meter tributary areas were combined for the I/I analysis to overcome the erratic influence of the Eastern Ave Pump Station



**Figure 4-2: Seasonal Average RDII Severity (Capture Coefficient)**

## APPENDIX

Table A-1: Dry Weather Analysis - Summer 2006 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2006	Weekdays	212.7	51,092	114.7	LL03	5.846	4.542	7.058	3.212	.55*Avg	2.634	45.1%		3.15	54%
	Summer						0.945	0.219	1.591	0.745		0.200	21.2%	1,744	0.37	39%
LL02	Combined with LL01															
LL03	2006	Weekdays	222.0	63,916	137.9	LL05, LL06	4.901	3.744	5.917	2.467	.50*Avg	2.434	49.7%		2.78	57%
	Summer					LL10	1.333	0.733	1.792	0.541		0.792	59.4%	5,743	0.57	43%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2006	Weekdays	94.3	19,784	31.2		0.263	0.123	0.397	0.174	S/S	0.089	33.8%		0.19	72%
	Summer						0.263	0.123	0.397	0.174		0.089	33.8%	2,855	0.19	72%
LL06	2006	Weekdays	231.6	34,937	71.9	LL07	1.459	0.848	1.759	0.978	S/S	0.481	33.0%		1.15	79%
	Summer					LL08	0.442	0.168	0.633	0.463		0.000	0.0%	0	0.46	104%
LL07	2006	Weekdays	98.9	33,166	51.5		0.440	0.285	0.520	0.226	S/S	0.214	48.6%		0.39	89%
	Summer						0.440	0.285	0.520	0.226		0.214	48.6%	4,159	0.39	89%
LL08	2006	Weekdays	269.5	38,012	68.8		0.577	0.389	0.692	0.289	S/S	0.288	49.9%		0.30	52%
	Summer						0.577	0.389	0.692	0.289		0.288	49.9%	4,187	0.30	52%
LL09	Combined with LL08															
LL10	2006	Weekdays	175.2	36,546	83.1	LL11, LL12	1.845	1.164	2.281	0.774	WW = (A-M)/88%	1.071	58.1%		0.87	47%
	Summer					LL14	0.258	0.097	0.416	0.046		0.212	82.2%	2,552	0.24	93%
LL11	2006	Weekdays	102.1	26,804	41.8		0.389	0.204	0.552	0.211	WW = (A-M)/88%	0.179	46.0%		0.23	59%
	Summer						0.389	0.204	0.552	0.211		0.179	46.0%	4,283	0.23	59%
LL12	2006	Weekdays	197.9	31,385	68.0	LL13	0.647	0.267	0.820	0.432	WW = (A-M)/88%	0.215	33.2%		0.37	57%
	Summer						0.339	0.144	0.481	0.195		0.144	42.5%	2,117	0.18	53%
LL13	2006	Weekdays	200.4	28,576	50.9		0.308	0.110	0.402	0.237	S/S	0.071	23.1%		0.19	62%
	Summer						0.308	0.110	0.402	0.237		0.071	23.1%	1,394	0.19	62%
LL14	2006	Weekdays	417.9	18,948	39.4		0.550	0.476	0.603	0.084	WW = (A-M)/88%	0.466	84.7%		0.03	5%
	Summer						0.550	0.476	0.603	0.084		0.466	84.7%	11,813	0.03	5%
WEST OF EASTERN AVENUE PS																
LL15	2006	Weekdays	94.0	29,446	53.0	LL16	1.503	1.179	1.662	0.670	S/S	0.833	55.4%		0.64	48%
	Summer						0.228	0.059	0.334	0.313		0.000	0.0%	0	0.24	105%
LL16	2006	Weekdays	65.6	16,848	33.4	LL17	1.275	1.117	1.390	0.357	S/S	0.918	72.0%		0.40	31%
	Summer						0.428	0.331	0.524	0.210		0.218	50.9%	6,537	0.28	65%
LL17	2006	Weekdays	82.8	28,790	46.8		0.847	0.777	0.877	0.147	S/S	0.700	82.6%		0.12	14%
	Summer						0.847	0.777	0.877	0.147		0.700	82.6%	14,973	0.12	14%
LL18	2006	Weekdays	85.5	21,887	44.2	LL19	3.142	2.490	3.520	0.740	WW = (A-M)/88%	2.401	76.4%		0.46	15%
	Summer						1.156	0.930	1.326	0.255		0.901	77.9%	20,380	0.12	10%
LL19	2006	Weekdays	158.3	36,352	65.7		1.985	1.558	2.212	0.486	WW = (A-M)/88%	1.499	75.5%		0.34	17%
	Summer						1.985	1.558	2.212	0.486		1.499	75.5%	22,819	0.34	17%
LL90	2007	Weekdays	116.7	27,102	90.5	LL21	13.162	10.069	15.560	6.581	.50*Avg	6.581	50.0%		6.43	49%

Table A-1: Dry Weather Analysis - Summer 2006 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL20	Summer					LL22	0.753	1.443	0.516	0.579		0.174	23.0%	1,918	0.63	84%
LL21	2006	Weekdays	150.3	34,525	65.4		1.137	0.793	1.444	0.605	S/S	0.532	46.8%		0.66	58%
	Summer						1.137	0.793	1.444	0.605		0.532	46.8%	8,133	0.66	58%
LL22	2006	Weekdays	112.7	24,778	64.4	LL23	11.272	7.833	13.600	5.397	.48*Avg	5.875	52.1%		5.14	46%
	Summer					LL25	0.606	0.000	1.490	0.398		0.000	0.0%	0	0.66	109%
LL23	2006	Weekdays	120.2	28,970	60.3	LL24	1.606	1.383	1.843	0.527	S/S	1.079	67.2%		0.81	50%
	Summer						0.631	0.557	0.723	0.179		0.452	71.6%	7,496	0.66	105%
LL24	2006	Weekdays	75.9	18,936	33.6		0.974	0.796	1.138	0.348	SS	0.627	64.4%		0.15	15%
	Summer						0.974	0.796	1.138	0.348		0.627	64.4%	18,677	0.15	15%
LL25	2006	Weekdays	185.9	34,167	114.4	LL26	9.097	6.801	10.749	4.472	.49*Avg	4.625	50.8%		3.67	40%
	Summer					LL29A	0.000	0.000	0.000	0.117		0.000	0.0%	0	0.21	0%
LL26	2006	Weekdays	117.5	24,203	53.3	LL27	1.959	1.634	2.287	1.142	.58*Avg	0.817	41.7%		0.42	21%
	Summer						0.341	0.084	0.509	0.165		0.176	51.6%	3,305	0.15	44%
LL27	2006	Weekdays	319.3	27,273	51.9	LL28	1.618	1.458	1.752	1.064	.65*Avg	0.554	34.3%		0.27	17%
	Summer						0.461	0.283	0.717	0.138		0.323	70.0%	6,226	0.15	33%
LL28	2006	Weekdays	374.7	27,013	56.4		1.157	0.906	1.305	0.926	.80*Avg	0.231	20.0%		0.12	10%
	Summer						1.157	0.906	1.305	0.926		0.231	20.0%	4,101	0.12	10%
LL29	Combined with LL25															
LL29A	2006	Weekdays	106.9	16,538	62.3	LL30, LL32, LL33	8.070	5.661	9.314	3.212	WW = (A-M)/75%	4.858	60.2%		3.03	38%
	Summer					LL34, LL38	0.131	0.000	0.424	0.019		0.000	0.0%	0	0.02	15%
LL30	2006	Weekdays	75.9	25,301	42.9	LL31	0.911	0.638	1.254	0.311	WW = (A-M)/88%	0.600	65.9%		0.33	36%
	Summer						0.587	0.452	0.785	0.116		0.470	80.1%	10,951	0.15	26%
LL31	2006	Weekdays	60.7	18,673	30.4		0.325	0.177	0.503	0.195	S/S	0.130	40.0%		0.18	55%
	Summer						0.325	0.177	0.503	0.195		0.130	40.0%	4,282	0.18	55%
LL32	2006	Weekdays	450.4	40,968	81.0		0.364	0.219	0.522	0.200	S/S	0.165	45.3%		0.25	69%
	Summer						0.364	0.219	0.552	0.200		0.165	45.3%	2,038	0.25	69%
LL33	2006	Weekdays	83.6	19,152	34.9		0.224	0.155	0.317	0.078	WW = (A-M)/88%	0.146	65.2%		0.08	36%
	Summer						0.224	0.155	0.317	0.078		0.146	65.2%	4,180	0.08	36%
LL34	2006	Weekdays	87.5	22,042	44.1	LL35	2.174	1.758	2.360	0.969	S/S	1.205	55.4%		0.71	33%
	Summer						1.091	0.894	1.181	0.534		0.557	51.1%	12,619	0.13	12%
LL35	2006	Weekdays	98.9	25,518	46.5	LL36, LL37	1.083	0.859	1.196	0.436	S/S	0.648	59.8%		0.58	54%
	Summer						0.317	0.258	0.357	0.182		0.136	42.9%	2,926	0.22	69%
LL36	2006	Weekdays	109.6	29,335	48.7		0.279	0.196	0.327	0.116	S/S	0.163	58.4%		0.20	72%
	Summer						0.279	0.196	0.327	0.116		0.163	58.4%	3,349	0.20	72%
LL37	2006	Weekdays	85.4	22,637	37.9		0.487	0.404	0.522	0.138	S/S	0.349	71.7%		0.16	33%
	Summer						0.487	0.404	0.522	0.138		0.349	71.7%	9,213	0.16	33%
LL38	2006	Weekdays	447.9	21,802	62.9	LL38A, LLS11	4.417	3.305	5.018	1.635	WW = (A-M)/68%	2.782	63.0%		1.64	37%
	Summer						0.572	0.299	0.752	0.073		0.500	87.4%	7,945	0.14	24%
LL38A	2006	Weekdays	353.9	24,701	86.3	LL39, LL42, LL44	3.682	2.733	4.217	1.506	WW = (A-M)/63%	2.176	59.1%		1.44	39%
	Summer					LL45, LL46, LL47	0.650	0.101	0.949	0.038		0.612	94.1%	7,089	0.04	6%
LL39	2006	Weekdays	196.9	28,093	54.0	LL40, LL41	0.774	0.482	0.910	0.389	WW = (A-M)/75%	0.385	49.7%		0.44	57%
	Summer						0.217	0.168	0.266	0.103		0.114	52.5%	2,112	0.11	51%

Table A-1: Dry Weather Analysis - Summer 2006 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL40	2006	Weekdays	253.1	30,823	50.0		0.293	0.161	0.375	0.149	WW = (A-M)/88%	0.144	49.1%		0.19	65%
	Summer						0.293	0.161	0.375	0.149		0.144	49.1%	2,879	0.19	65%
LL41	2006	Weekdays	315.3	43,196	73.7		0.264	0.144	0.334	0.137	WW = (A-M)/88%	0.127	48.1%		0.14	53%
	Summer						0.264	0.144	0.334	0.137		0.127	48.1%	1,724	0.14	53%
LL42	2006	Weekdays	122.4	19,918	37.5	LL43	0.952	0.359	1.269	0.674	WW = (A-M)/88%	0.278	29.2%		0.32	34%
	Summer						0.472	0.185	0.621	0.263		0.209	44.3%	5,578	0.09	19%
LL43	2006	Weekdays	293.2	35,870	57.6		0.480	0.118	0.680	0.411	WW = (A-M)/88%	0.069	14.4%		0.23	48%
	Summer						0.480	0.118	0.680	0.411		0.069	14.4%	1,197	0.23	48%
LL44	2006	Weekdays	190.4	45,120	75.1		0.627	0.520	0.671	0.122	WW = (A-M)/88%	0.505	80.5%		0.36	57%
	Summer						0.627	0.520	0.671	0.122		0.505	80.5%	6,725	0.36	57%
LL45	2006	Weekdays	204.0	20,392	32.5		0.208	0.154	0.242	0.061	WW = (A-M)/88%	0.147	70.7%		0.07	34%
	Summer						0.208	0.154	0.242	0.061		0.147	70.7%	4,523	0.07	34%
LL46	2006	Weekdays	52.7	8,711	13.4		0.220	0.107	0.394	0.129	WW = (A-M)/88%	0.091	41.4%		0.10	45%
	Summer						0.220	0.107	0.394			0.091	41.4%	6,786	0.10	45%
LL47	2006	Weekdays	282.7	31,130	57.8		0.251	0.170	0.313	0.093	WW = (A-M)/88%	0.158	62.9%		0.10	40%
	Summer						0.251	0.170	0.313	0.093		0.158	62.9%	2,734	0.10	40%
LLS11	2006	Weekdays	82.5	10,565	18.4		0.162	0.113	0.185	0.056	WW = (A-M)/88%	0.106	65.4%		0.01	6%
	Summer						0.162	0.113	0.185	0.056		0.106	65.4%	5,751	0.01	6%

denotes heavy pumping station influence.

Table A-2: Dry Weather Analysis - Summer 2006 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2006	Saturdays	212.7	51,092	114.7	LL03	5.861	4.356	7.331	3.074	.55*Avg	2.787	47.6%		3.15	54%
	Summer						0.913	0.000	1.991	0.565		0.339	37.1%	2,955	0.37	41%
LL02	Combined with LL01															
LL03	2006	Saturdays	222.0	63,916	137.9	LL05, LL06	4.957	3.767	6.041	2.508	.50*Avg	2.449	49.4%		2.78	56%
	Summer					LL10	1.326	0.208	2.072	0.627		0.701	52.9%	5,083	0.57	43%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2006	Saturdays	94.3	19,784	31.2		0.275	0.149	0.377	0.162	S/S	0.112	40.7%		0.19	69%
	Summer						0.275	0.149	0.377	0.162		0.112	40.7%	3,593	0.19	69%
LL06	2006	Saturdays	231.6	34,937	71.9	LL07	1.492	0.886	1.923	0.985	S/S	0.507	34.0%		1.15	77%
	Summer					LL08	0.464	0.178	0.665	0.491		0.000	0.0%	0	0.46	99%
LL07	2006	Saturdays	98.9	33,166	51.5		0.456	0.295	0.566	0.234	S/S	0.222	48.7%		0.39	86%
	Summer						0.456	0.295	0.566	0.234		0.222	48.7%	4,315	0.39	86%
LL08	2006	Saturdays	269.5	38,012	68.8		0.573	0.408	0.706	0.261	S/S	0.312	54.5%		0.30	52%
	Summer						0.573	0.408	0.706	0.261		0.312	54.5%	4,536	0.30	52%
LL09	Combined with LL08															
LL10	2006	Saturdays	175.2	36,546	83.1	LL11, LL12	1.862	1.217	2.322	0.733	WW = (A-M)/88%	1.129	60.6%		0.87	47%
	Summer					LL14	0.342	0.202	0.441	0.077		0.265	77.5%	3,190	0.24	70%
LL11	2006	Saturdays	102.1	26,804	41.8		0.383	0.206	0.549	0.201	WW = (A-M)/88%	0.182	47.5%		0.23	60%
	Summer						0.383	0.206	0.549	0.201		0.182	47.5%	4,355	0.23	60%
LL12	2006	Saturdays	197.9	31,385	68.0	LL13	0.593	0.255	0.832	0.384	WW = (A-M)/88%	0.209	35.2%		0.37	62%
	Summer						0.265	0.093	0.399	0.153		0.112	42.3%	1,646	0.18	68%
LL13	2006	Saturdays	200.4	28,576	50.9		0.328	0.142	0.448	0.231	S/S	0.096	29.3%		0.19	58%
	Summer						0.328	0.142	0.448	0.231		0.096	29.3%	1,885	0.19	58%
LL14	2006	Saturdays	417.9	18,948	39.4		0.545	0.481	0.607	0.072	WW = (A-M)/88%	0.473	86.8%		0.03	6%
	Summer						0.545	0.481	0.607	0.072		0.473	86.8%	11,993	0.03	6%
WEST OF EASTERN AVENUE PS																
LL15	2006	Saturdays	94.0	29,446	53.0	LL16	1.423	1.156	1.585	0.568	S/S	0.855	60.1%		0.64	45%
	Summer						0.182	0.026	0.289	0.280		0.000	0.0%	0	0.24	132%
LL16	2006	Saturdays	65.6	16,848	33.4	LL17	1.242	1.119	1.323	0.288	S/S	0.955	76.9%		0.40	32%
	Summer						0.411	0.348	0.455	0.138		0.273	66.4%	8,186	0.28	68%
LL17	2006	Saturdays	82.8	28,790	46.8		0.831	0.760	0.884	0.149	S/S	0.682	82.1%		0.12	14%
	Summer						0.831	0.760	0.884	0.149		0.682	82.1%	14,588	0.12	14%
LL18	2006	Saturdays	85.5	21,887	44.2	LL19	3.062	2.360	3.462	0.798	WW = (A-M)/88%	2.264	73.9%		0.46	15%
	Summer						1.140	0.880	1.372	0.298		0.842	73.9%	19,045	0.12	11%
LL19	2006	Saturdays	158.3	36,352	65.7		1.922	1.481	2.223	0.501	WW = (A-M)/88%	1.421	73.9%		0.34	18%
	Summer						1.922	1.481	2.223	0.501		1.421	73.9%	21,632	0.34	18%
LL20	2007	Saturdays	116.7	27,102	90.5	LL21	13.005	7.333	18.968	5.852	.45*Avg	7.153	55.0%		6.43	49%
	Summer					LL22	1.187	0.000	3.930	0.672		0.515	43.4%	5,690	0.63	53%
LL21	2006	Saturdays	150.3	34,525	65.4		0.906	0.711	1.113	0.360	S/S	0.546	60.3%		0.66	73%
	Summer						0.906	0.711	1.113	0.360		0.546	60.3%	8,347	0.66	73%
LL22	2006	Saturdays	112.7	24,778	64.4	LL23	10.912	7.429	13.925	4.820	.44*Avg	6.092	55.8%		5.14	47%
	Summer					LL25	0.476	0.000	1.597	0.284		0.000	0.0%	0	0.66	139%

Table A-2: Dry Weather Analysis - Summer 2006 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL23	2006	Saturdays	120.2	28,970	60.3	LL24	1.495	1.428	1.584	0.183	S/S	1.312	87.8%		0.81	54%
	Summer						0.670	0.598	0.769	0.000		0.670	100.0%	11,111	0.66	99%
LL24	2006	Saturdays	75.9	18,936	33.6		0.825	0.703	0.927	0.237	SS	0.588	71.3%		0.15	18%
	Summer						0.825	0.703	0.927	0.237		0.588	71.3%	17,516	0.15	18%
LL25	2006	Saturdays	185.9	34,167	114.4	LL26	9.038	6.332	11.384	4.353	.48*Avg	4.685	51.8%		3.67	41%
	Summer					LL29A	0.070	0.000	0.571	0.300		0.000	0.0%	0	0.21	300%
LL26	2006	Saturdays	117.5	24,203	53.3	LL27	1.755	1.450	2.078	0.913	.52*Avg	0.842	48.0%		0.42	24%
	Summer						0.451	0.170	0.657	0.061		0.390	86.6%	7,329	0.15	33%
LL27	2006	Saturdays	319.3	27,273	51.9	LL28	1.303	1.074	1.538	0.852	.65*Avg	0.451	34.6%		0.27	21%
	Summer						0.307	0.000	0.756	0.047		0.260	84.6%	5,011	0.15	49%
LL28	2006	Saturdays	374.7	27,013	56.4		1.006	0.470	1.477	0.805	.80*Avg	0.201	20.0%		0.12	12%
	Summer						1.006	0.470	1.477	0.805		0.201	20.0%	3,565	0.12	12%
LL29	Combined with LL25															
LL29A	2006	Saturdays	106.9	16,538	62.3	LL30, LL32, LL33	7.699	5.595	9.284	3.140	WW = (A-M)/67%	4.559	59.2%		3.03	39%
	Summer					LL34, LL38	0.003	0.000	0.074	0.010		0.000	0.0%	0	0.02	667%
LL30	2006	Saturdays	75.9	25,301	42.9	LL31	0.950	0.686	1.145	0.300	WW = (A-M)/88%	0.650	68.4%		0.33	35%
	Summer						0.599	0.476	0.703	0.095		0.504	84.1%	11,743	0.15	25%
LL31	2006	Saturdays	60.7	18,673	30.4		0.351	0.198	0.442	0.205	S/S	0.145	41.3%		0.18	51%
	Summer						0.351	0.198	0.442	0.205		0.145	41.3%	4,776	0.18	51%
LL32	2006	Saturdays	450.4	40,968	81.0		0.373	0.217	0.493	0.213	S/S	0.160	42.9%		0.25	67%
	Summer						0.373	0.217	0.493	0.213		0.160	42.9%	1,977	0.25	67%
LL33	2006	Saturdays	83.6	19,152	34.9		0.194	0.120	0.248	0.084	WW = (A-M)/88%	0.110	56.7%		0.08	41%
	Summer						0.194	0.120	0.248	0.084		0.110	56.7%	3,149	0.08	41%
LL34	2006	Saturdays	87.5	22,042	44.1	LL35	2.176	1.757	2.457	0.975	S/S	1.201	55.2%		0.71	33%
	Summer						1.039	0.844	1.147	0.518		0.518	49.9%	11,735	0.13	13%
LL35	2006	Saturdays	98.9	25,518	46.5	LL36, LL37	1.137	0.905	1.329	0.456	S/S	0.680	59.8%		0.58	51%
	Summer						0.366	0.298	0.459	0.201		0.165	45.1%	3,550	0.22	60%
LL36	2006	Saturdays	109.6	29,335	48.7		0.284	0.191	0.344	0.128	S/S	0.156	54.9%		0.20	70%
	Summer						0.284	0.191	0.344	0.128		0.156	54.9%	3,205	0.20	70%
LL37	2006	Saturdays	85.4	22,637	37.9		0.487	0.412	0.535	0.127	S/S	0.360	73.9%		0.16	33%
	Summer						0.487	0.412	0.535	0.127		0.360	73.9%	9,504	0.16	33%
LL38	2006	Saturdays	447.9	21,802	62.9	LL38A, LLS11	4.280	3.189	5.111	1.559	WW = (A-M)/70%	2.721	63.6%		1.64	38%
	Summer						0.525	0.181	0.821	0.166		0.360	68.6%	5,723	0.14	27%
LL38A	2006	Saturdays	353.9	24,701	86.3	LL39, LL42, LIA4	3.600	2.761	4.349	1.332	WW = (A-M)/63%	2.268	63.0%		1.44	40%
	Summer					LL45, LL46, LIA7	0.771	0.383	1.032	0.104		0.667	86.5%	7,734	0.04	5%
LL39	2006	Saturdays	196.9	28,093	54.0	LL40, LIA1	0.781	0.492	0.954	0.386	WW = (A-M)/75%	0.395	50.6%		0.44	56%
	Summer						0.208	0.166	0.261	0.077		0.131	63.0%	2,427	0.11	53%
LL40	2006	Saturdays	253.1	30,823	50.0		0.314	0.163	0.421	0.172	WW = (A-M)/88%	0.142	45.2%		0.19	61%
	Summer						0.314	0.163	0.421	0.172		0.142	45.2%	2,839	0.19	61%
LL41	2006	Saturdays	315.3	43,196	73.7		0.259	0.139	0.340	0.137	WW = (A-M)/88%	0.122	47.1%		0.14	54%
	Summer						0.259	0.139	0.340	0.137		0.122	47.1%	1,656	0.14	54%
LL42	2006	Saturdays	122.4	19,918	37.5	LL43	0.782	0.364	1.078	0.475	WW = (A-M)/88%	0.307	39.3%		0.32	41%
	Summer						0.417	0.133	0.556	0.206		0.211	50.6%	5,631	0.09	22%

Table A-2: Dry Weather Analysis - Summer 2006 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL43	2006	Saturdays	293.2	35,870	57.6		0.365	0.128	0.532	0.269	WW = (A-M)/88%	0.096	26.3%		0.23	64%
	Summer						0.365	0.128	0.532	0.269		0.096	26.3%	1,666	0.23	63%
LL44	2006	Saturdays	190.4	45,120	75.1		0.629	0.516	0.700	0.128	WW = (A-M)/88%	0.501	79.7%		0.36	57%
	Summer						0.629	0.516	0.700	0.128		0.501	79.7%	6,672	0.36	57%
LL45	2006	Saturdays	204.0	20,392	32.5		0.207	0.159	0.240	0.054	WW = (A-M)/88%	0.153	73.9%		0.07	34%
	Summer						0.207	0.159	0.240	0.054		0.153	73.9%	4,708	0.07	34%
LL46	2006	Saturdays	52.7	8,711	13.4		0.213	0.099	0.382	0.129	WW = (A-M)/88%	0.084	39.4%		0.10	47%
	Summer						0.213	0.099	0.382	0.129		0.084	39.4%	6,264	0.10	47%
LL47	2006	Saturdays	282.7	31,130	57.8		0.217	0.168	0.255	0.056	WW = (A-M)/88%	0.161	74.2%		0.10	46%
	Summer						0.217	0.168	0.255	0.056		0.161	74.2%	2,785	0.10	46%
LLS11	2006	Saturdays	82.5	10,565	18.4		0.154	0.101	0.193	0.061	WW = (A-M)/88%	0.093	60.4%		0.01	6%
	Summer						0.154	0.101	0.193	0.061		0.093	60.4%	5,046	0.01	6%

[Yellow Box] denotes heavy pumping station influence.

Table A-3: Dry Weather Analysis - Summer 2006 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2006	Sundays	212.7	51,092	114.7	LL03	6.024	3.528	8.128	3.590	.55*Avg	2.434	40.4%		3.15	52%
	Summer						1.193	0.000	2.908	0.569		0.595	49.9%	5,187	0.37	31%
LL02	Combined with LL01															
LL03	2006	Sundays	222.0	63,916	137.9	LL05, LL06	4.861	3.066	6.063	3.022	.50*Avg	1.839	37.8%		2.78	57%
	Summer					LL10	1.251	0.197	2.512	1.033		0.218	17.4%	1,581	0.57	46%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2006	Sundays	94.3	19,784	31.2		0.273	0.130	0.374	0.179	S/S	0.093	34.1%		0.19	70%
	Summer						0.273	0.130	0.374	0.179		0.093	34.1%	2,984	0.19	70%
LL06	2006	Sundays	231.6	34,937	71.9	LL07	1.531	0.871	2.122	1.047	S/S	0.484	31.6%		1.15	75%
	Summer					LL08	0.514	0.211	0.864	0.515		0.000	0.0%	0	0.46	89%
LL07	2006	Sundays	98.9	33,166	51.5		0.453	0.273	0.562	0.255	S/S	0.198	43.7%		0.39	86%
	Summer						0.453	0.273	0.562	0.255		0.198	43.7%	3,848	0.39	86%
LL08	2006	Sundays	269.5	38,012	68.8		0.564	0.384	0.716	0.277	S/S	0.287	50.9%		0.30	53%
	Summer						0.564	0.384	0.716	0.277		0.287	50.9%	4,173	0.30	53%
LL09	Combined with LL08															
LL10	2006	Sundays	175.2	36,546	83.1	LL11, LL12	1.806	1.135	2.255	0.762	WW = (A-M)/88%	1.043	57.8%		0.87	48%
	Summer					LL14	0.268	0.062	0.426	0.174		0.234	87.3%	2,817	0.24	90%
LL11	2006	Sundays	102.1	26,804	41.8		0.368	0.223	0.509	0.164	WW = (A-M)/88%	0.203	55.2%		0.23	63%
	Summer						0.368	0.223	0.509	0.164		0.203	55.2%	4,858	0.23	63%
LL12	2006	Sundays	197.9	31,385	68.0	LL13	0.575	0.266	0.859	0.351	WW = (A-M)/88%	0.224	39.0%		0.37	64%
	Summer						0.293	0.127	0.438	0.149		0.144	49.1%	2,117	0.18	61%
LL13	2006	Sundays	200.4	28,576	50.9		0.282	0.117	0.427	0.202	S/S	0.080	28.4%		0.19	67%
	Summer						0.282	0.117	0.427	0.202		0.080	28.4%	1,571	0.19	67%
LL14	2006	Sundays	417.9	18,948	39.4		0.595	0.531	0.642	0.073	WW = (A-M)/88%	0.522	87.7%		0.03	5%
	Summer						0.595	0.531	0.642	0.073		0.522	87.7%	13,235	0.03	5%
WEST OF EASTERN AVENUE PS																
LL15	2006	Sundays	94.0	29,446	53.0	LL16	1.463	1.197	1.688	0.573	S/S	0.890	60.8%		0.64	44%
	Summer						0.242	0.097	0.404	0.268		0.000	0.0%	0	0.24	99%
LL16	2006	Sundays	65.6	16,848	33.4	LL17	1.221	1.087	1.305	0.305	S/S	0.916	75.0%		0.40	33%
	Summer						0.440	0.345	0.494	0.213		0.227	51.6%	6,807	0.28	64%
LL17	2006	Sundays	82.8	28,790	46.8		0.782	0.738	0.830	0.093	S/S	0.689	88.1%		0.12	15%
	Summer						0.782	0.738	0.830	0.093		0.689	88.1%	14,738	0.12	15%
LL18	2006	Sundays	85.5	21,887	44.2	LL19	3.116	2.399	3.542	0.814	WW = (A-M)/88%	2.302	73.9%		0.46	15%
	Summer						1.178	0.879	1.362	0.336		1.278	108.5%	28,907	0.12	10%
LL19	2006	Sundays	158.3	36,352	65.7		1.938	1.518	2.200	0.478	WW = (A-M)/88%	1.461	75.4%		0.34	18%
	Summer						1.938	1.518	2.200	0.478		1.461	75.4%	22,241	0.34	18%
LL20	2006	Sundays	116.7	27,102	90.5	LL21	13.090	8.876	16.854	6.283	.48*Avg	4.240	32.4%		6.43	49%
	Summer					LL22	1.985	0.000	2.864	0.859		0.830	41.8%	9,174	0.63	32%
LL21	2006	Sundays	150.3	34,525	65.4		0.871	0.704	1.050	0.314	S/S	0.557	63.9%		0.66	76%
	Summer						0.871	0.704	1.050	0.314		0.557	63.9%	8,516	0.66	76%
LL22	2006	Sundays	112.7	24,778	64.4	LL23	10.234	6.655	12.940	5.110	.50*Avg	5.124	50.1%		5.14	50%
	Summer					LL25	0.423	0.000	1.514	0.866		0.000	0.0%	0	0.66	156%

Table A-3: Dry Weather Analysis - Summer 2006 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL23	2006	Sundays	120.2	28,970	60.3	LL24	1.537	1.461	1.677	0.209	SS	1.328	86.4%		0.81	53%
	Summer						0.638	0.534	0.740	0.000		0.679	106.4%	11,260	0.66	103%
LL24	2006	Sundays	75.9	18,936	33.6		0.899	0.774	0.992	0.250	SS	0.649	72.2%		0.15	17%
	Summer						0.899	0.774	0.992	0.250		0.649	72.2%	19,333	0.15	17%
LL25	2006	Sundays	185.9	34,167	114.4	LL26	8.405	5.202	10.667	4.035	.48*Avg	4.370	52.0%		3.67	44%
	Summer					LL29A	0.113	0.000	1.119	0.561		0.000	0.0%	0	0.21	186%
LL26	2006	Sundays	117.5	24,203	53.3	LL27	1.239	0.871	1.580	0.418	WW = (A-M)/88%	0.821	66.3%		0.42	34%
	Summer						0.334	0.131	0.583	0.141		0.193	57.8%	3,624	0.15	45%
LL27	2006	Sundays	319.3	27,273	51.9	LL28	0.905	0.662	1.130	0.276	WW = (A-M)/88%	0.629	69.5%		0.27	30%
	Summer						0.451	0.000	0.693	0.000		0.448	99.3%	8,639	0.15	33%
LL28	2006	Sundays	374.7	27,013	56.4		0.458	0.214	1.073	0.277	WW = (A-M)/88%	0.181	39.5%		0.12	26%
	Summer						0.458	0.214	1.073	0.277		0.181	39.5%	3,208	0.12	26%
LL29	Combined with LL25															
LL29A	2006	Sundays	106.9	16,538	62.3	LL30, LL32, LL33	7.620	5.786	8.966	3.057	WW = (A-M)/60%	4.563	59.9%		3.03	40%
	Summer					LL34, LL38	0.060	0.000	0.382	0.049		0.000	0.0%	0	0.02	33%
LL30	2006	Sundays	75.9	25,301	42.9	LL31	0.918	0.670	1.126	0.281	WW = (A-M)/88%	0.637	69.4%		0.33	36%
	Summer						0.590	0.477	0.706	0.096		0.495	83.9%	11,533	0.15	25%
LL31	2006	Sundays	60.7	18,673	30.4		0.328	0.189	0.433	0.186	S/S	0.142	43.3%		0.18	55%
	Summer						0.328	0.189	0.433	0.186		0.142	43.3%	4,677	0.18	55%
LL32	2006	Sundays	450.4	40,968	81.0		0.338	0.197	0.459	0.191	S/S	0.148	43.8%		0.25	74%
	Summer						0.338	0.197	0.459	0.191		0.148	43.8%	1,828	0.25	74%
LL33	2006	Sundays	83.6	19,152	34.9		0.194	0.126	0.255	0.078	WW = (A-M)/88%	0.117	60.3%		0.08	41%
	Summer						0.194	0.126	0.255	0.078		0.117	60.3%	3,350	0.08	41%
LL34	2006	Sundays	87.5	22,042	44.1	LL35	2.167	1.750	2.482	0.968	S/S	1.198	55.3%		0.71	33%
	Summer						1.098	0.928	1.253	0.502		0.597	54.4%	13,525	0.13	12%
LL35	2006	Sundays	98.9	25,518	46.5	LL36, LL37	1.068	0.820	1.280	0.466	S/S	0.602	56.4%		0.58	54%
	Summer						0.288	0.208	0.373	0.200		0.088	30.6%	1,893	0.22	76%
LL36	2006	Sundays	109.6	29,335	48.7		0.302	0.200	0.385	0.141	S/S	0.161	53.3%		0.20	66%
	Summer						0.302	0.200	0.385	0.141		0.161	53.3%	3,308	0.20	66%
LL37	2006	Sundays	85.4	22,637	37.9		0.478	0.404	0.532	0.125	S/S	0.353	73.8%		0.16	33%
	Summer						0.478	0.404	0.532	0.125		0.353	73.8%	9,319	0.16	33%
LL38	2006	Sundays	447.9	21,802	62.9	LL38A, LLS11	4.156	3.411	4.609	1.490	WW = (A-M)/50%	2.666	64.1%		1.64	39%
	Summer						0.657	0.412	0.890	0.314		0.344	52.4%	5,466	0.14	21%
LL38A	2006	Sundays	353.9	24,701	86.3	LL39, LL42, LIA4	3.340	2.777	3.798	1.126	WW = (A-M)/50%	2.214	66.3%		1.44	43%
	Summer					LL45, LL46, LL47	0.864	0.602	1.036	0.241		0.624	72.2%	7,228	0.04	5%
LL39	2006	Sundays	196.9	28,093	54.0	LL40, LIA1	0.774	0.463	0.960	0.415	WW = (A-M)/75%	0.359	46.4%		0.44	57%
	Summer						0.221	0.152	0.274	0.096		0.125	56.7%	2,322	0.11	50%
LL40	2006	Sundays	253.1	30,823	50.0		0.300	0.139	0.407	0.184	WW = (A-M)/88%	0.116	38.7%		0.19	63%
	Summer						0.300	0.139	0.407	0.184		0.116	38.7%	2,319	0.19	63%
LL41	2006	Sundays	315.3	43,196	73.7		0.253	0.134	0.356	0.135	WW = (A-M)/88%	0.118	46.6%		0.14	55%
	Summer						0.253	0.134	0.356	0.135		0.118	46.6%	1,602	0.14	55%
LL42	2006	Sundays	122.4	19,918	37.5	LL43	0.517	0.380	0.647	0.156	WW = (A-M)/88%	0.361	69.8%		0.32	62%
	Summer						0.325	0.236	0.422	0.080		0.246	75.7%	6,565	0.09	28%

Table A-3: Dry Weather Analysis - Summer 2006 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL43	2006	Sundays	293.2	35,870	57.6		0.192	0.135	0.237	0.066	WW = (A-M)/88%	0.126	65.6%		0.23	121%
	Summer						0.192	0.135	0.237	0.066		0.126	65.6%	2,186	0.23	120%
LL44	2006	Sundays	190.4	45,120	75.1		0.593	0.482	0.666	0.126	WW = (A-M)/88%	0.467	78.8%		0.36	61%
	Summer						0.593	0.482	0.666	0.126		0.467	78.8%	6,219	0.36	61%
LL45	2006	Sundays	204.0	20,392	32.5		0.212	0.167	0.245	0.052	WW = (A-M)/88%	0.160	75.5%		0.07	33%
	Summer						0.212	0.167	0.245	0.052		0.160	75.5%	4,923	0.07	33%
LL46	2006	Sundays	52.7	8,711	13.4		0.167	0.101	0.227	0.075	WW = (A-M)/88%	0.092	55.1%		0.10	60%
	Summer						0.167	0.101	0.227	0.075		0.092	55.1%	6,861	0.10	60%
LL47	2006	Sundays	282.7	31,130	57.8		0.213	0.159	0.261	0.061	WW = (A-M)/88%	0.151	70.9%		0.10	47%
	Summer						0.213	0.159	0.261	0.061		0.151	70.9%	2,612	0.10	47%
LLS11	2006	Sundays	82.5	10,565	18.4		0.158	0.114	0.191	0.050	WW = (A-M)/88%	0.108	68.4%		0.01	6%
	Summer						0.158	0.114	0.191	0.050		0.108	68.4%	5,860	0.01	6%

[Yellow Box] denotes heavy pumping station influence.

Table A-4: Dry Weather Analysis - Winter 2007 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2007	Weekdays	212.7	51,092	114.7	LL03	6.004	3.911	7.240	3.305	.55*Avg	2.699	45.0%		3.15	52%
	Winter						0.628	0.000	1.410	0.347		0.237	37.7%	2,066	0.37	59%
LL02	Combined with LL01															
LL03	2007	Weekdays	222.0	63,916	137.9	LL05, LL06	5.420	4.477	6.018	2.734	.50*Avg	2.462	45.4%		2.78	51%
	Winter					LL10	1.422	0.874	2.235	0.704		0.719	50.6%	5,214	0.57	40%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2007	Weekdays	94.3	19,784	31.2		0.267	0.103	0.408	0.197	S/S	0.070	26.2%		0.19	71%
	Winter						0.267	0.103	0.408	0.197		0.070	26.2%	2,246	0.19	71%
LL06	2007	Weekdays	231.6	34,937	71.9	LL07	1.497	0.963	1.791	0.918	S/S	0.579	38.7%		1.15	77%
	Winter					LL08	0.480	0.261	0.647	0.428		0.052	10.8%	724	0.46	96%
LL07	2007	Weekdays	98.9	33,166	51.5		0.429	0.280	0.541	0.216	S/S	0.213	49.7%		0.39	91%
	Winter						0.429	0.280	0.541	0.216		0.213	49.7%	4,140	0.39	91%
LL08	2007	Weekdays	269.5	38,012	68.8		0.588	0.415	0.690	0.274	S/S	0.314	53.4%		0.30	51%
	Winter						0.588	0.415	0.690	0.274		0.314	53.4%	4,565	0.30	51%
LL09	Combined with LL08															
LL10	2007	Weekdays	175.2	36,546	83.1	LL11, LL12	2.233	1.428	2.763	0.915	WW = (A-M)/88%	1.318	59.0%		0.87	39%
	Winter					LL14	0.518	0.326	0.731	0.169		0.350	67.5%	4,209	0.24	46%
LL11	2007	Weekdays	102.1	26,804	41.8		0.346	0.135	0.507	0.240	WW = (A-M)/88%	0.106	30.7%		0.23	66%
	Winter						0.346	0.135	0.507	0.240		0.106	30.7%	2,542	0.23	66%
LL12	2007	Weekdays	197.9	31,385	68.0	LL13	0.779	0.451	0.918	0.373	WW = (A-M)/88%	0.406	52.2%		0.37	47%
	Winter						0.528	0.299	0.655	0.227		0.300	56.9%	4,414	0.18	34%
LL13	2007	Weekdays	200.4	28,576	50.9		0.252	0.138	0.341	0.146	S/S	0.106	42.1%		0.19	75%
	Winter						0.252	0.138	0.341	0.146		0.106	42.1%	2,082	0.19	75%
LL14	2007	Weekdays	417.9	18,948	39.4		0.589	0.472	0.668	0.133	WW = (A-M)/88%	0.456	77.4%		0.03	5%
	Winter						0.589	0.472	0.668	0.133		0.456	77.4%	11,563	0.03	5%
WEST OF EASTERN AVENUE PS																
LL15	2007	Weekdays	94.0	29,446	53.0	LL16	1.657	1.394	1.874	0.606	S/S	1.051	63.4%		0.64	39%
	Winter						0.579	0.458	0.654	0.299		0.280	48.4%	5,286	0.24	41%
LL16	2007	Weekdays	65.6	16,848	33.4	LL17	1.079	0.934	1.220	0.307	S/S	0.772	71.5%		0.40	37%
	Winter						0.509	0.442	0.638	0.159		0.350	68.8%	10,495	0.28	55%
LL17	2007	Weekdays	82.8	28,790	46.8		0.569	0.486	0.625	0.148	S/S	0.421	74.0%		0.12	21%
	Winter						0.569	0.486	0.625	0.148		0.421	74.0%	9,005	0.12	21%
LL18	2007	Weekdays	85.5	21,887	44.2	LL19	3.199	2.520	3.639	0.772	WW = (A-M)/88%	2.427	75.9%		0.46	14%
	Winter						1.131	0.832	1.358	0.340		0.791	70.0%	17,897	0.12	11%
LL19	2007	Weekdays	158.3	36,352	65.7		2.068	1.688	2.281	0.432	WW = (A-M)/88%	1.636	79.1%		0.34	16%
	Winter						2.068	1.688	2.281	0.432		1.636	79.1%	24,908	0.34	16%
LL20	2007	Weekdays	116.7	27,102	90.5	LL21	13.162	10.069	15.560	6.581	.50*Avg	6.581	50.0%		6.43	49%
	Summer					LL22	1.325	1.881	1.104	0.362		0.963	72.7%	10,649	0.63	48%
LL21	2007	Weekdays	150.3	34,525	65.4		1.142	0.760	1.465	0.649	S/S	0.493	43.2%		0.66	58%
	Winter						1.142	0.760	1.465	0.649		0.493	43.2%	7,537	0.66	58%
LL22	2007	Weekdays	112.7	24,778	64.4	LL23	10.695	7.428	12.991	5.570	.52*Avg	5.125	47.9%		5.14	48%
	Winter					LL25	0.368	0.000	1.096	0.575		0.000	0.0%	0	0.66	179%

Table A-4: Dry Weather Analysis - Winter 2007 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL23	2007	Weekdays	120.2	28,970	60.3	LL24	1.344	1.111	1.540	0.498	S/S	0.846	62.9%		0.81	60%
	Winter						0.418	0.359	0.511	0.153		0.264	63.2%	4,378	0.66	158%
LL24	2007	Weekdays	75.9	18,936	33.6		0.927	0.745	1.101	0.345	SS	0.582	62.8%		0.15	16%
	Winter						0.927	0.745	1.101	0.345		0.582	62.8%	17,337	0.15	16%
LL25	2007	Weekdays	185.9	34,167	114.4	LL26	9.161	6.857	10.882	4.498	.49*Avg	4.663	50.9%		3.67	40%
	Winter					LL29A	0.035	0.000	0.722	0.139		0.000	0.0%	0	0.21	600%
LL26	2007	Weekdays	117.5	24,203	53.3	LL27	1.948	1.540	2.271	1.177	.60*Avg	0.771	39.6%		0.42	22%
	Winter						0.069	0.000	0.210	0.045		0.024	34.2%	443	0.15	217%
LL27	2007	Weekdays	319.3	27,273	51.9	LL28	1.879	1.592	2.061	1.131	.60*Avg	0.748	39.8%		0.27	14%
	Winter						0.445	0.357	0.569	0.060		0.385	86.5%	7,426	0.15	34%
LL28	2007	Weekdays	374.7	27,013	56.4		1.434	1.209	1.563	1.072	.75*Avg	0.363	25.3%		0.12	8%
	Winter						1.434	1.209	1.563	1.072		0.363	25.3%	6,424	0.12	8%
LL29	Combined with LL25															
LL29A	2007	Weekdays	106.9	16,538	62.3	LL30, LL32, LL33	8.207	5.566	9.613	3.182	WW = (A-M)/83%	5.025	61.2%		3.03	37%
	Winter					LL34, LL38	0.514	0.000	0.900	0.014		0.500	97.2%	8,022	0.02	4%
LL30	2007	Weekdays	75.9	25,301	42.9	LL31	1.100	0.773	1.533	0.372	WW = (A-M)/88%	0.728	66.2%		0.33	30%
	Winter						0.804	0.612	1.119	0.192		0.611	76.0%	14,236	0.15	19%
LL31	2007	Weekdays	60.7	18,673	30.4		0.296	0.159	0.464	0.179	S/S	0.117	39.5%		0.18	61%
	Winter						0.296	0.159	0.464	0.179		0.117	39.5%	3,854	0.18	61%
LL32	2007	Weekdays	450.4	40,968	81.0		0.380	0.207	0.551	0.232	S/S	0.148	38.9%		0.25	66%
	Winter						0.380	0.207	0.551	0.232		0.148	38.9%	1,828	0.25	66%
LL33	2007	Weekdays	83.6	19,152	34.9		0.194	0.118	0.284	0.086	WW = (A-M)/88%	0.108	55.5%		0.08	41%
	Winter						0.194	0.118	0.284	0.086		0.108	55.5%	3,081	0.08	41%
LL34	2007	Weekdays	87.5	22,042	44.1	LL35	2.334	1.998	2.519	0.873	S/S	1.461	62.6%		0.71	30%
	Winter						1.232	1.113	1.292	0.444		0.788	64.0%	17,852	0.13	11%
LL35	2007	Weekdays	98.9	25,518	46.5	LL36, LL37	1.102	0.885	1.227	0.429	S/S	0.673	61.1%		0.58	53%
	Winter						0.318	0.260	0.348	0.182		0.136	42.8%	2,926	0.22	69%
LL36	2007	Weekdays	109.6	29,335	48.7		0.294	0.218	0.339	0.109	S/S	0.185	62.9%		0.20	68%
	Winter						0.294	0.218	0.339	0.109		0.185	62.9%	3,801	0.20	68%
LL37	2007	Weekdays	85.4	22,637	37.9		0.490	0.407	0.540	0.138	S/S	0.352	71.8%		0.16	33%
	Winter						0.490	0.407	0.540	0.138		0.352	71.8%	9,293	0.16	33%
LL38	2007	Weekdays	447.9	21,802	62.9	LL38A, LLS11	3.761	2.766	4.323	1.605	WW = (A-M)/60%	2.156	57.3%		1.64	44%
	Winter						0.328	0.004	0.466	0.071		0.257	78.3%	4,082	0.14	43%
LL38A	2007	Weekdays	353.9	24,701	86.3	LL39, LL42, LL44	3.335	2.290	3.973	1.493	WW = (A-M)/70%	1.842	55.2%		1.44	43%
	Winter						0.251	0.000	0.447	0.033		0.205	81.5%	2,371	0.04	16%
LL39	2007	Weekdays	196.9	28,093	54.0	LL40, LL41	0.783	0.501	0.910	0.448	WW = (A-M)/63%	0.335	42.8%		0.44	56%
	Winter						0.132	0.073	0.195	0.102		0.030	23.1%	564	0.11	83%
LL40	2007	Weekdays	253.1	30,823	50.0		0.350	0.192	0.451	0.179	WW = (A-M)/88%	0.171	48.9%		0.19	54%
	Winter						0.350	0.192	0.451	0.179		0.171	48.9%	3,419	0.19	54%
LL41	2007	Weekdays	315.3	43,196	73.7		0.301	0.154	0.379	0.167	WW = (A-M)/88%	0.134	44.5%		0.14	47%
	Winter						0.301	0.154	0.379	0.167		0.134	44.5%	1,819	0.14	47%
LL42	2007	Weekdays	122.4	19,918	37.5	LL43	0.835	0.320	1.138	0.585	WW = (A-M)/88%	0.250	29.9%		0.32	38%
	Winter						0.244	0.000	0.337	0.106		0.138	56.6%	3,683	0.09	37%

Table A-4: Dry Weather Analysis - Winter 2007 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL43	2007	Weekdays	293.2	35,870	57.6		0.592	0.171	0.829	0.479	WW = (A-M)/88%	0.113	19.1%		0.23	39%
	Winter						0.592	0.171	0.829	0.479		0.113	19.1%	1,961	0.23	39%
LL44	2007	Weekdays	190.4	45,120	75.1		0.692	0.577	0.760	0.131	WW = (A-M)/88%	0.561	81.1%		0.36	52%
	Winter						0.692	0.577	0.760	0.131		0.561	81.1%	7,475	0.36	52%
LL45	2007	Weekdays	204.0	20,392	32.5		0.218	0.155	0.251	0.072	WW = (A-M)/88%	0.146	67.2%		0.07	32%
	Winter						0.218	0.155	0.251	0.072		0.146	67.2%	4,505	0.07	32%
LL46	2007	Weekdays	52.7	8,711	13.4		0.219	0.121	0.396	0.112	WW = (A-M)/88%	0.107	48.9%		0.10	46%
	Winter						0.219	0.121	0.396			0.107	48.9%	7,979	0.10	46%
LL47	2007	Weekdays	282.7	31,130	57.8		0.350	0.251	0.438	0.113	WW = (A-M)/88%	0.238	67.9%		0.10	29%
	Winter						0.350	0.251	0.438	0.113		0.238	67.9%	4,109	0.10	29%
LLS11	2007	Weekdays	82.5	10,565	18.4		0.099	0.063	0.125	0.041	WW = (A-M)/88%	0.058	58.7%		0.01	10%
	Winter						0.099	0.063	0.125	0.041		0.058	58.7%	3,152	0.01	10%

[Yellow box] denotes heavy pumping station influence.

Table A-5: Dry Weather Analysis - Winter 2007 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2007	Saturdays	212.7	51,092	114.7	LL03	5.964	3.870	8.734	2.868	.48*Avg	3.096	51.9%		3.15	53%
	Winter						0.590	0.000	2.744	0.551		0.317	53.7%	2,763	0.37	63%
LL02	Combined with LL01															
LL03	2007	Saturdays	222.0	63,916	137.9	LL05, LL06	5.522	4.632	6.482	2.743	.50*Avg	2.779	50.3%		2.78	50%
	Winter					LL10	1.298	0.410	2.425	0.561		0.737	56.8%	5,344	0.57	44%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2007	Saturdays	94.3	19,784	31.2		0.290	0.119	0.404	0.209	S/S	0.081	27.9%		0.19	66%
	Winter						0.290	0.119	0.404	0.209		0.081	27.9%	2,599	0.19	66%
LL06	2007	Saturdays	231.6	34,937	71.9	LL07	1.590	1.007	2.060	0.999	S/S	0.591	37.2%		1.15	72%
	Winter					LL08	0.597	0.313	0.849	0.525		0.072	12.1%	1,002	0.46	77%
LL07	2007	Saturdays	98.9	33,166	51.5		0.450	0.294	0.562	0.227	S/S	0.222	49.3%		0.39	87%
	Winter						0.450	0.294	0.562	0.227		0.222	49.3%	4,315	0.39	87%
LL08	2007	Saturdays	269.5	38,012	68.8		0.543	0.385	0.666	0.246	S/S	0.296	54.5%		0.30	55%
	Winter						0.543	0.385	0.666	0.246		0.296	54.5%	4,304	0.30	55%
LL09	Combined with LL08															
LL10	2007	Saturdays	175.2	36,546	83.1	LL11, LL12	2.344	1.487	2.976	0.974	WW = (A-M)/88%	1.370	58.4%		0.87	37%
	Winter					LL14	0.636	0.296	0.895	0.306		0.330	51.9%	3,972	0.24	38%
LL11	2007	Saturdays	102.1	26,804	41.8		0.355	0.160	0.523	0.222	WW = (A-M)/88%	0.133	37.5%		0.23	65%
	Winter						0.355	0.160	0.523	0.222		0.133	37.5%	3,183	0.23	65%
LL12	2007	Saturdays	197.9	31,385	68.0	LL13	0.762	0.451	0.967	0.353	WW = (A-M)/88%	0.409	53.7%		0.37	49%
	Winter						0.507	0.318	0.628	0.198		0.309	60.9%	4,542	0.18	36%
LL13	2007	Saturdays	200.4	28,576	50.9		0.255	0.133	0.414	0.155	S/S	0.100	39.2%		0.19	75%
	Winter						0.255	0.133	0.414	0.155		0.100	39.2%	1,964	0.19	75%
LL14	2007	Saturdays	417.9	18,948	39.4		0.591	0.508	0.679	0.094	WW = (A-M)/88%	0.497	84.1%		0.03	5%
	Winter						0.591	0.508	0.679	0.094		0.497	84.1%	12,601	0.03	5%
WEST OF EASTERN AVENUE PS																
LL15	2007	Saturdays	94.0	29,446	53.0	LL16	1.583	1.393	1.747	0.462	S/S	1.121	70.8%		0.64	40%
	Winter						0.584	0.480	0.680	0.250		0.334	57.2%	6,305	0.24	41%
LL16	2007	Saturdays	65.6	16,848	33.4	LL17	0.999	0.902	1.079	0.213	S/S	0.787	78.8%		0.40	40%
	Winter						0.455	0.423	0.492	0.073		0.381	83.7%	11,424	0.28	62%
LL17	2007	Saturdays	82.8	28,790	46.8		0.544	0.465	0.595	0.139	S/S	0.405	74.4%		0.12	22%
	Winter						0.544	0.465	0.595	0.139		0.405	74.4%	8,663	0.12	22%
LL18	2007	Saturdays	85.5	21,887	44.2	LL19	3.199	2.515	3.621	0.778	WW = (A-M)/88%	2.421	75.7%		0.46	14%
	Winter						1.151	0.835	1.411	0.364		1.230	106.9%	27,822	0.12	10%
LL19	2007	Saturdays	158.3	36,352	65.7		2.048	1.684	2.323	0.413	WW = (A-M)/88%	1.635	79.8%		0.34	17%
	Winter						2.048	1.684	2.323	0.413		1.635	79.8%	24,890	0.34	17%
LL20	2007	Saturdays	116.7	27,102	90.5	LL21	13.005	7.333	18.968	6.503	.50*Avg	6.503	50.0%		6.43	49%
	Winter					LL22	1.769	0.000	4.880	0.992		0.778	44.0%	8,594	0.63	36%
LL21	2007	Saturdays	150.3	34,525	65.4		0.944	0.736	1.129	0.385	S/S	0.559	59.2%		0.66	70%
	Winter						0.944	0.736	1.129	0.385		0.559	59.2%	8,546	0.66	70%
LL22	2007	Saturdays	112.7	24,778	64.4	LL23	10.292	6.797	12.959	5.126	.50*Avg	5.166	50.2%		5.14	50%
	Winter					LL25	0.206	0.000	1.449	0.986		0.000	0.0%	0	0.66	320%

Table A-5: Dry Weather Analysis - Winter 2007 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL23	2007	Saturdays	120.2	28,970	60.3	LL24	1.265	1.146	1.397	0.281	S/S	0.985	77.9%		0.81	64%
	Winter						0.421	0.364	0.470	0.079		0.342	81.2%	5,672	0.66	157%
LL24	2007	Saturdays	75.9	18,936	33.6		0.844	0.745	0.937	0.201	SS	0.643	76.2%		0.15	18%
	Winter						0.844	0.745	0.937	0.201		0.643	76.2%	19,154	0.15	18%
LL25	2007	Saturdays	185.9	34,167	114.4	LL26	9.215	6.779	11.372	3.859	.42*Avg	5.356	58.1%		3.67	40%
	Winter					LL29A	0.145	0.000	1.567	0.013		0.000	0.0%	0	0.21	145%
LL26	2007	Saturdays	117.5	24,203	53.3	LL27	1.501	1.130	1.891	0.756	.50*Avg	0.746	49.7%		0.42	28%
	Winter						0.223	0.000	0.497	0.118		0.099	44.6%	1,868	0.15	67%
LL27	2007	Saturdays	319.3	27,273	51.9	LL28	1.284	0.936	1.822	0.638	.50*Avg	0.646	50.3%		0.27	21%
	Winter						0.490	0.186	0.731	0.162		0.329	67.1%	6,340	0.15	31%
LL28	2007	Saturdays	374.7	27,013	56.4		0.793	0.435	1.452	0.476	.60*Avg	0.317	40.0%		0.12	15%
	Winter						0.793	0.435	1.452	0.476		0.317	40.0%	5,621	0.12	15%
LL29	Combined with LL25															
LL29A	2007	Saturdays	106.9	16,538	62.3	LL30, LL32, LL33	8.198	5.633	10.010	3.090	WW = (A-M)/83%	5.108	62.3%		3.03	37%
	Winter					LL34, LL38	0.543	0.000	1.023	0.006		0.511	94.0%	8,197	0.02	4%
LL30	2007	Saturdays	75.9	25,301	42.9	LL31	1.206	0.849	1.463	0.405	WW = (A-M)/88%	0.801	66.4%		0.33	27%
	Winter						0.863	0.662	1.021	0.194		0.669	77.5%	15,587	0.15	17%
LL31	2007	Saturdays	60.7	18,673	30.4		0.343	0.183	0.450	0.211	S/S	0.132	38.5%		0.18	52%
	Winter						0.343	0.183	0.450	0.211		0.132	38.5%	4,348	0.18	52%
LL32	2007	Saturdays	450.4	40,968	81.0		0.404	0.237	0.526	0.231	S/S	0.173	42.8%		0.25	62%
	Winter						0.404	0.237	0.526	0.231		0.173	42.8%	2,137	0.25	62%
LL33	2007	Saturdays	83.6	19,152	34.9		0.179	0.118	0.233	0.069	WW = (A-M)/88%	0.110	61.5%		0.08	45%
	Winter						0.179	0.118	0.233	0.069		0.110	61.5%	3,149	0.08	45%
LL34	2007	Saturdays	87.5	22,042	44.1	LL35	2.391	2.018	2.669	0.953	S/S	1.439	60.2%		0.71	30%
	Winter						1.240	1.089	1.332	0.508		0.733	59.1%	16,606	0.13	10%
LL35	2007	Saturdays	98.9	25,518	46.5	LL36, LL37	1.151	0.929	1.340	0.445	S/S	0.706	61.3%		0.58	50%
	Winter						0.334	0.258	0.416	0.199		0.135	40.4%	2,904	0.22	66%
LL36	2007	Saturdays	109.6	29,335	48.7		0.311	0.229	0.369	0.118	S/S	0.193	62.1%		0.20	64%
	Winter						0.311	0.229	0.369	0.118		0.193	62.1%	3,965	0.20	64%
LL37	2007	Saturdays	85.4	22,637	37.9		0.506	0.432	0.562	0.128	S/S	0.379	74.9%		0.16	32%
	Winter						0.506	0.432	0.562	0.128		0.379	74.9%	10,005	0.16	32%
LL38	2007	Saturdays	447.9	21,802	62.9	LL38A, LLS11	3.501	2.645	4.238	1.427	WW = (A-M)/60%	2.074	59.2%		1.64	47%
	Winter						0.157	0.000	0.359	0.022		0.135	86.0%	2,146	0.14	89%
LL38A	2007	Saturdays	353.9	24,701	86.3	LL39, LL42, LIA4	3.248	2.292	4.051	1.366	WW = (A-M)/70%	1.882	42.0%		1.44	44%
	Winter					LL45, LL46, LIA7	0.294	0.000	0.451	0.073		0.214	72.7%	2,476	0.04	14%
LL39	2007	Saturdays	196.9	28,093	54.0	LL40, LIA1	0.802	0.527	1.001	0.458	WW = (A-M)/60%	0.344	42.9%		0.44	55%
	Winter						0.134	0.091	0.205	0.117		0.165	123.1%	3,057	0.11	82%
LL40	2007	Saturdays	253.1	30,823	50.0		0.365	0.203	0.486	0.184	WW = (A-M)/88%	0.181	49.6%		0.19	52%
	Winter						0.365	0.203	0.486	0.184		0.181	49.6%	3,619	0.19	52%
LL41	2007	Saturdays	315.3	43,196	73.7		0.303	0.165	0.400	0.157	WW = (A-M)/88%	0.146	48.2%		0.14	46%
	Winter						0.303	0.165	0.400	0.157		0.146	48.2%	1,982	0.14	46%
LL42	2007	Saturdays	122.4	19,918	37.5	LL43	0.712	0.320	1.055	0.446	WW = (A-M)/88%	0.266	37.4%		0.32	45%
	Winter						0.239	0.000	0.433	0.106		0.132	55.2%	3,523	0.09	38%

Table A-5: Dry Weather Analysis - Winter 2007 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL43	2007	Saturdays	293.2	35,870	57.6		0.474	0.176	0.729	0.340	WW = (A-M)/88%	0.134	28.3%		0.23	49%
	Winter						0.474	0.176	0.729	0.340		0.134	28.3%	2,325	0.23	49%
LL44	2007	Saturdays	190.4	45,120	75.1		0.692	0.570	0.782	0.138	WW = (A-M)/88%	0.553	79.9%		0.36	52%
	Winter						0.692	0.570	0.782	0.138		0.553	79.9%	7,364	0.36	52%
LL45	2007	Saturdays	204.0	20,392	32.5		0.225	0.172	0.267	0.061	WW = (A-M)/88%	0.164	72.9%		0.07	31%
	Winter						0.225	0.172	0.267	0.061		0.164	72.9%	5,046	0.07	31%
LL46	2007	Saturdays	52.7	8,711	13.4		0.221	0.112	0.382	0.123	WW = (A-M)/88%	0.098	44.3%		0.10	45%
	Winter						0.221	0.112	0.382	0.123		0.098	44.3%	7,308	0.10	45%
LL47	2007	Saturdays	282.7	31,130	57.8		0.310	0.253	0.369	0.066	WW = (A-M)/88%	0.244	78.7%		0.10	32%
	Winter						0.310	0.253	0.369	0.066		0.244	78.7%	4,221	0.10	32%
LLS11	2007	Saturdays	82.5	10,565	18.4		0.096	0.061	0.117	0.039	WW = (A-M)/88%	0.057	59.4%		0.01	10%
	Winter						0.096	0.061	0.117	0.039		0.057	59.4%	3,093	0.01	10%

[Yellow Box] denotes heavy pumping station influence.

Table A-6: Dry Weather Analysis - Winter 2007 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2007	Sundays	212.7	51,092	114.7	LL03	5.993	3.463	8.279	3.015	.50*Avg	2.979	49.7%		3.15	53%
	Winter						0.603	0.000	2.251	0.240		0.156	25.9%	1,360	0.37	61%
LL02	Combined with LL01															
LL03	2007	Sundays	222.0	63,916	137.9	LL05, LL06	5.597	4.551	6.793	2.775	.50*Avg	2.823	50.4%		2.78	50%
	Winter					LL10	1.381	0.343	2.357	0.611		0.770	55.7%	5,580	0.57	41%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2007	Sundays	94.3	19,784	31.2		0.295	0.116	0.417	0.218	S/S	0.078	26.4%		0.19	64%
	Winter						0.295	0.116	0.417	0.218		0.078	26.4%	2,502	0.19	64%
LL06	2007	Sundays	231.6	34,937	71.9	LL07	1.612	0.986	2.091	1.047	S/S	0.565	35.0%		1.15	71%
	Winter					LL08	0.549	0.253	0.770	0.535		0.015	2.7%	209	0.46	84%
LL07	2007	Sundays	98.9	33,166	51.5		0.462	0.285	0.587	0.253	S/S	0.209	45.2%		0.39	84%
	Winter						0.462	0.285	0.587	0.253		0.209	45.2%	4,062	0.39	84%
LL08	2007	Sundays	269.5	38,012	68.8		0.601	0.441	0.750	0.259	S/S	0.342	56.9%		0.30	50%
	Winter						0.601	0.441	0.750	0.259		0.342	56.9%	4,972	0.30	50%
LL09	Combined with LL08															
LL10	2007	Sundays	175.2	36,546	83.1	LL11, LL12	2.309	1.518	2.867	0.899	WW = (A-M)/88%	1.410	61.1%		0.87	38%
	Winter					LL14	0.622	0.425	0.759	0.186		0.436	70.1%	5,248	0.24	39%
LL11	2007	Sundays	102.1	26,804	41.8		0.352	0.144	0.525	0.235	WW = (A-M)/88%	0.452	128.4%		0.23	65%
	Winter						0.352	0.144	0.525	0.235		0.452	128.4%	10,816	0.23	65%
LL12	2007	Sundays	197.9	31,385	68.0	LL13	0.774	0.491	1.013	0.321	WW = (A-M)/88%	0.452	58.4%		0.37	48%
	Winter						0.527	0.336	0.658	0.177		0.351	66.6%	5,159	0.18	34%
LL13	2007	Sundays	200.4	28,576	50.9		0.246	0.133	0.380	0.145	S/S	0.102	41.5%		0.19	77%
	Winter						0.246	0.133	0.380	0.145		0.102	41.5%	2,003	0.19	77%
LL14	2007	Sundays	417.9	18,948	39.4		0.562	0.424	0.661	0.157	WW = (A-M)/88%	0.405	72.1%		0.03	5%
	Winter						0.562	0.424	0.661	0.157		0.405	72.1%	10,269	0.03	5%
WEST OF EASTERN AVENUE PS																
LL15	2007	Sundays	94.0	29,446	53.0	LL16	1.616	1.352	1.770	0.601	S/S	1.015	62.8%		0.64	40%
	Winter						0.615	0.471	0.710	0.334		0.282	45.9%	5,324	0.24	39%
LL16	2007	Sundays	65.6	16,848	33.4	LL17	1.001	0.873	1.085	0.267	S/S	0.734	73.3%		0.40	40%
	Winter						0.479	0.459	0.511	0.076		0.403	84.1%	12,084	0.28	58%
LL17	2007	Sundays	82.8	28,790	46.8		0.522	0.404	0.594	0.191	S/S	0.330	63.2%		0.12	23%
	Winter						0.522	0.404	0.594	0.191		0.330	63.2%	7,059	0.12	23%
LL18	2007	Sundays	85.5	21,887	44.2	LL19	3.174	2.370	3.600	0.914	WW = (A-M)/88%	2.261	71.2%		0.46	14%
	Winter						1.122	0.700	1.400	0.473		0.650	57.9%	14,703	0.12	11%
LL19	2007	Sundays	158.3	36,352	65.7		2.052	1.664	2.305	0.441	WW = (A-M)/88%	1.611	78.5%		0.34	17%
	Winter						2.052	1.664	2.305	0.441		1.611	78.5%	24,524	0.34	17%
LL20	2007	Sundays	116.7	27,102	90.5	LL21	13.090	8.876	16.854	6.545	.50*Avg	6.545	50.0%		6.43	49%
	Winter					LL22	2.489	0.000	6.337	1.265		1.515	62.1%	16,740	0.63	26%
LL21	2007	Sundays	150.3	34,525	65.4		0.600	1.003	1.225	0.402	S/S	0.198	33.0%		0.66	110%
	Winter						0.600	1.003	1.225	0.402		0.198	33.0%	3,027	0.66	110%
LL22	2007	Sundays	112.7	24,778	64.4	LL23	9.711	6.359	12.967	4.879	.50*Avg	4.833	49.8%		5.14	53%
	Winter					LL25	0.149	0.000	1.301	1.117		0.000	0.0%	0	0.66	443%

Table A-6: Dry Weather Analysis - Winter 2007 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL23	2007	Sundays	120.2	28,970	60.3	LL24	1.232	1.131	1.397	0.241	S/S	0.991	80.4%		0.81	66%
	Winter						0.407	0.311	0.519	0.033		0.374	91.9%	6,202	0.66	162%
LL24	2007	Sundays	75.9	18,936	33.6		0.825	0.721	0.901	0.208	SS	0.618	74.9%		0.15	18%
	Winter						0.825	0.721	0.901	0.208		0.618	74.9%	18,409	0.15	18%
LL25	2007	Sundays	185.9	34,167	114.4	LL26	8.734	5.857	10.832	3.521	.40*Avg	5.213	59.7%		3.67	42%
	Winter					LL29A	0.318	0.000	1.673	0.244		0.000	0.0%	0	0.21	66%
LL26	2007	Sundays	117.5	24,203	53.3	LL27	1.174	0.686	1.504	0.488	WW = (A-M)/100%	0.686	58.4%		0.42	36%
	Winter						1.119	0.000	0.348	0.087		0.000	0.0%	0	0.15	13%
LL27	2007	Sundays	319.3	27,273	51.9	LL28	1.104	0.803	1.359	0.401	WW = (A-M)/7.5%	0.703	63.7%		0.27	24%
	Winter						0.496	0.316	0.750	0.157		0.339	68.3%	6,537	0.15	30%
LL28	2007	Sundays	374.7	27,013	56.4		0.608	0.393	0.981	0.243	WW = (A-M)/88%	0.364	59.9%		0.12	20%
	Winter						0.608	0.393	0.981	0.243		0.364	59.9%	6,450	0.12	20%
LL29	Combined with LL25															
LL29A	2007	Sundays	106.9	16,538	62.3	LL30, LL32, LL33	7.770	5.539	9.187	2.789	WW = (A-M)/80%	4.981	64.1%		3.03	39%
	Winter					LL34, LL38	0.479	0.000	0.952	0.016		0.428	89.4%	6,874	0.02	4%
LL30	2007	Sundays	75.9	25,301	42.9	LL31	1.129	0.789	1.398	0.387	WW = (A-M)/88%	0.742	65.7%		0.33	29%
	Winter						0.806	0.600	0.986	0.195		0.611	75.8%	14,236	0.15	19%
LL31	2007	Sundays	60.7	18,673	30.4		0.323	0.178	0.432	0.192	S/S	0.131	40.6%		0.18	56%
	Winter						0.323	0.178	0.432	0.192		0.131	40.6%	4,315	0.18	56%
LL32	2007	Sundays	450.4	40,968	81.0		0.393	0.209	0.528	0.246	S/S	0.147	37.4%		0.25	64%
	Winter						0.393	0.209	0.528	0.246		0.147	37.4%	1,816	0.25	64%
LL33	2007	Sundays	83.6	19,152	34.9		0.194	0.118	0.258	0.086	WW = (A-M)/88%	0.108	55.7%		0.08	41%
	Winter						0.194	0.118	0.258	0.086		0.108	55.7%	3,092	0.08	41%
LL34	2007	Sundays	87.5	22,042	44.1	LL35	2.316	1.985	2.608	0.860	S/S	1.456	62.9%		0.71	31%
	Winter						1.182	1.065	1.271	0.383		0.799	67.6%	18,101	0.13	11%
LL35	2007	Sundays	98.9	25,518	46.5	LL36, LL37	1.134	0.888	1.344	0.477	S/S	0.657	57.9%		0.58	51%
	Winter						0.340	0.255	0.434	0.212		0.128	37.6%	2,754	0.22	65%
LL36	2007	Sundays	109.6	29,335	48.7		0.311	0.216	0.378	0.134	S/S	0.177	56.9%		0.20	64%
	Winter						0.311	0.216	0.378	0.134		0.177	56.9%	3,637	0.20	64%
LL37	2007	Sundays	85.4	22,637	37.9		0.483	0.405	0.538	0.131	S/S	0.353	73.1%		0.16	33%
	Winter						0.483	0.405	0.538	0.131		0.353	73.1%	9,319	0.16	33%
LL38	2007	Sundays	447.9	21,802	62.9	LL38A, LLS11	3.294	2.577	3.742	1.194	WW = (A-M)/60%	2.100	63.8%		1.64	50%
	Winter						0.200	0.000	0.461	0.061		0.138	68.8%	2,187	0.14	70%
LL38A	2007	Sundays	353.9	24,701	86.3	LL39, LL42, LIA4	2.991	2.197	3.556	1.087	WW = (A-M)/73%	1.904	63.7%		1.44	48%
	Winter					LL45, LL46, LIA7	0.388	0.067	0.542	0.049		0.338	87.2%	3,922	0.04	10%
LL39	2007	Sundays	196.9	28,093	54.0	LL40, LIA1	0.795	0.485	1.006	0.492	WW = (A-M)/63%	0.303	38.1%		0.44	55%
	Winter						0.188	0.094	0.206	0.126		0.011	7.9%	203	0.11	80%
LL40	2007	Sundays	253.1	30,823	50.0		0.350	0.179	0.468	0.195	WW = (A-M)/88%	0.156	44.6%		0.19	54%
	Winter						0.350	0.179	0.468	0.195		0.156	44.6%	3,119	0.19	54%
LL41	2007	Sundays	315.3	43,196	73.7		0.306	0.156	0.402	0.171	WW = (A-M)/88%	0.136	44.4%		0.14	46%
	Winter						0.306	0.156	0.402	0.171		0.136	44.4%	1,847	0.14	46%
LL42	2007	Sundays	122.4	19,918	37.5	LL43	0.410	0.266	0.507	0.164	WW = (A-M)/88%	0.247	60.2%		0.32	78%
	Winter						0.166	0.076	0.222	0.076		0.107	64.5%	2,856	0.09	54%

Table A-6: Dry Weather Analysis - Winter 2007 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL43	2007	Sundays	293.2	35,870	57.6		0.244	0.167	0.301	0.088	WW = (A-M)/88%	0.157	64.3%		0.23	95%
	Winter						0.244	0.167	0.301	0.088		0.157	64.3%	2,724	0.23	94%
LL44	2007	Sundays	190.4	45,120	75.1		0.679	0.560	0.769	0.136	WW = (A-M)/88%	0.543	80.0%		0.36	53%
	Winter						0.679	0.560	0.769	0.136		0.543	80.0%	7,231	0.36	53%
LL45	2007	Sundays	204.0	20,392	32.5		0.221	0.150	0.286	0.080	WW = (A-M)/88%	0.141	63.8%		0.07	32%
	Winter						0.221	0.150	0.286	0.080		0.141	63.8%	4,338	0.07	32%
LL46	2007	Sundays	52.7	8,711	13.4		0.183	0.109	0.238	0.084	WW = (A-M)/88%	0.099	54.1%		0.10	55%
	Winter						0.183	0.109	0.238	0.084		0.099	54.1%	7,383	0.10	55%
LL47	2007	Sundays	282.7	31,130	57.8		0.315	0.243	0.371	0.082	WW = (A-M)/88%	0.233	74.0%		0.10	32%
	Winter						0.315	0.243	0.371	0.082		0.233	74.0%	4,031	0.10	32%
LLS11	2007	Sundays	82.5	10,565	18.4		0.104	0.063	0.132	0.046	WW = (A-M)/88%	0.058	55.8%		0.01	10%
	Winter						0.104	0.063	0.132	0.046		0.058	55.8%	3,147	0.01	10%

[Yellow Box] denotes heavy pumping station influence.

Table A-7: Dry Weather Analysis - Summer 2007 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2007	Weekdays	212.7	51,092	114.7	LL03	7.092	4.120	9.621	3.191	.45*Avg	3.901	55.0%		3.15	44%
	Summer						1.622	0.000	3.449	0.446		1.176	72.5%	10,248	0.37	23%
LL02	Combined with LL01															
LL03	2007	Weekdays	222.0	63,916	137.9	LL05, LL06	5.490	4.052	7.216	2.745	.50*Avg	2.745	50.0%		2.78	51%
	Summer					LL10	1.248	0.698	1.897	0.607		0.641	51.3%	4,645	0.57	46%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2007	Weekdays	94.3	19,784	31.2		0.277	0.109	0.419	0.203	S/S	0.074	26.7%		0.19	69%
	Summer						0.277	0.109	0.419	0.203		0.074	26.7%	2,374	0.19	69%
LL06	2007	Weekdays	231.6	34,937	71.9	LL07	1.604	0.994	1.961	1.030	S/S	0.574	35.8%		1.15	72%
	Summer					LL08	0.782	0.470	0.965	0.598		0.184	23.5%	2,560	0.46	59%
LL07	2007	Weekdays	98.9	33,166	51.5		0.400	0.246	0.538	0.216	S/S	0.184	46.0%		0.39	98%
	Summer						0.400	0.246	0.538	0.216		0.184	46.0%	3,576	0.39	98%
LL08	2007	Weekdays	269.5	38,012	68.8		0.422	0.273	0.523	0.216	S/S	0.206	48.8%		0.30	71%
	Summer						0.422	0.273	0.523	0.216		0.206	48.8%	2,995	0.30	71%
LL09	Combined with LL08															
LL10	2007	Weekdays	175.2	36,546	83.1	LL11, LL12	2.361	1.565	2.940	0.905	WW = (A-M)/88%	1.456	61.7%		0.87	37%
	Summer					LL14	0.600	0.407	0.809	0.144		0.456	76.0%	5,489	0.24	40%
LL11	2007	Weekdays	102.1	26,804	41.8		0.355	0.161	0.548	0.220	WW = (A-M)/88%	0.135	38.0%		0.23	65%
	Summer						0.355	0.161	0.548	0.220		0.135	38.0%	3,230	0.23	65%
LL12	2007	Weekdays	197.9	31,385	68.0	LL13	0.873	0.510	1.046	0.413	WW = (A-M)/88%	0.460	52.7%		0.37	42%
	Summer						0.489	0.339	0.604	0.139		0.350	71.6%	5,145	0.18	37%
LL13	2007	Weekdays	200.4	28,576	50.9		0.384	0.168	0.484	0.273	S/S	0.111	28.9%		0.19	49%
	Summer						0.384	0.168	0.484	0.273		0.111	28.9%	2,180	0.19	49%
LL14	2007	Weekdays	417.9	18,948	39.4		0.533	0.420	0.631	0.128	WW = (A-M)/88%	0.405	76.0%		0.03	6%
	Summer						0.533	0.420	0.631	0.128		0.405	76.0%	10,269	0.03	6%
WEST OF EASTERN AVENUE PS																
LL15	2007	Weekdays	94.0	29,446	53.0	LL16	1.714	1.389	2.008	0.718	S/S	0.996	58.1%		0.64	37%
	Summer						0.710	0.549	0.878	0.381		0.329	46.3%	6,211	0.24	34%
LL16	2007	Weekdays	65.6	16,848	33.4	LL17	1.003	0.835	1.146	0.337	S/S	0.666	66.4%		0.40	40%
	Summer						0.576	0.468	0.713	0.236		0.340	59.0%	10,195	0.28	49%
LL17	2007	Weekdays	82.8	28,790	46.8		0.427	0.366	0.461	0.101	S/S	0.326	76.3%		0.12	28%
	Summer						0.427	0.366	0.461	0.101		0.326	76.3%	6,973	0.12	28%
LL18	2007	Weekdays	85.5	21,887	44.2	LL19	3.062	2.399	3.418	0.753	WW = (A-M)/88%	2.309	75.4%		0.46	15%
	Summer						1.008	0.709	1.212	0.313		0.695	68.9%	15,720	0.12	12%
LL19	2007	Weekdays	158.3	36,352	65.7		2.054	1.667	2.247	0.440	WW = (A-M)/88%	1.614	78.6%		0.34	17%
	Summer						2.054	1.667	2.247	0.440		1.614	78.6%	24,570	0.34	17%
LL20	2007	Weekdays	116.7	27,102	90.5	LL21	13.162	10.069	15.560	6.581	.50*Avg	6.581	50.0%		6.43	49%
	Summer					LL22	0.895	0.000	3.585	0.509		0.386	43.1%	4,263	0.63	70%
LL21	2007	Weekdays	150.3	34,525	65.4		1.123	0.733	1.450	0.652	S/S	0.471	41.9%		0.66	59%
	Summer						1.123	0.733	1.450	0.652		0.471	41.9%	7,201	0.66	59%
LL22	2007	Weekdays	112.7	24,778	64.4	LL23	11.291	6.980	14.356	5.420	.48*Avg	5.871	52.0%		5.14	46%
	Summer					LL25	0.185	0.000	0.988	0.463		0.000	0.0%	0	0.66	357%

Table A-7: Dry Weather Analysis - Summer 2007 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL23	2007	Weekdays	120.2	28,970	60.3	LL24	2.248	2.026	2.434	0.628	S/S	1.620	72.1%		0.81	36%
	Summer						1.321	1.235	1.480	0.305		1.016	76.9%	16,849	0.66	50%
LL24	2007	Weekdays	75.9	18,936	33.6		0.927	0.760	1.092	0.324	SS	0.603	65.0%		0.15	16%
	Summer						0.927	0.760	1.092	0.324		0.603	65.0%	17,962	0.15	16%
LL25	2007	Weekdays	185.9	34,167	114.4	LL26	9.210	6.345	11.188	4.329	.47*Avg	4.881	53.0%		3.67	40%
	Summer					LL29A	0.003	0.000	0.134	0.118		0.000	0.0%	0	0.21	7000%
LL26	2007	Weekdays	117.5	24,203	53.3	LL27	1.819	1.254	2.211	0.910	.50*Avg	0.910	50.0%		0.42	23%
	Summer						0.092	0.000	0.243	0.040		0.053	57.1%	986	0.15	163%
LL27	2007	Weekdays	319.3	27,273	51.9	LL28	1.740	1.367	2.023	0.870	.50*Avg	0.870	50.0%		0.27	16%
	Summer						0.431	0.273	0.607	0.220		0.211	49.0%	4,069	0.15	35%
LL28	2007	Weekdays	374.7	27,013	56.4		1.308	1.028	1.440	0.650	.50*Avg	0.658	50.3%		0.12	9%
	Summer						1.308	1.028	1.440	0.650		0.658	50.3%	11,660	0.12	9%
LL29	Combined with LL25															
LL29A	2007	Weekdays	106.9	16,538	62.3	LL30, LL32, LL33	8.593	6.216	9.866	3.301	WW = (A-M)/72%	5.292	61.6%		3.03	35%
	Summer					LL34, LL38	0.419	0.000	0.809	0.042		0.377	90.1%	6,059	0.02	5%
LL30	2007	Weekdays	75.9	25,301	42.9	LL31	1.101	0.769	1.553	0.377	WW = (A-M)/88%	0.724	65.8%		0.33	30%
	Summer						0.807	0.610	1.090	0.202		0.605	75.0%	14,096	0.15	19%
LL31	2007	Weekdays	60.7	18,673	30.4		0.293	0.159	0.463	0.174	S/S	0.119	40.6%		0.18	61%
	Summer						0.293	0.159	0.463	0.174		0.119	40.6%	3,920	0.18	61%
LL32	2007	Weekdays	450.4	40,968	81.0		0.376	0.249	0.546	0.182	S/S	0.194	51.6%		0.25	66%
	Summer						0.376	0.249	0.546	0.182		0.194	51.6%	2,397	0.25	66%
LL33	2007	Weekdays	83.6	19,152	34.9		0.283	0.149	0.331	0.095	WW = (A-M)/88%	0.138	59.2%		0.08	34%
	Summer						0.283	0.149	0.331	0.095		0.138	59.2%	3,951	0.08	34%
LL34	2007	Weekdays	87.5	22,042	44.1	LL35	2.341	1.950	2.580	0.969	S/S	1.372	58.6%		0.71	30%
	Summer						1.160	0.982	1.285	0.527		0.633	54.6%	14,341	0.13	11%
LL35	2007	Weekdays	98.9	25,518	46.5	LL36, LL37	1.180	0.964	1.305	0.442	S/S	0.738	62.5%		0.58	49%
	Summer						0.255	0.176	0.302	0.181		0.074	29.0%	1,592	0.22	86%
LL36	2007	Weekdays	109.6	29,335	48.7		0.366	0.293	0.407	0.112	S/S	0.254	69.4%		0.20	55%
	Summer						0.366	0.293	0.407	0.112		0.254	69.4%	5,219	0.20	55%
LL37	2007	Weekdays	85.4	22,637	37.9		0.560	0.475	0.610	0.149	S/S	0.411	73.4%		0.16	29%
	Summer						0.560	0.475	0.610	0.149		0.411	73.4%	10,850	0.16	29%
LL38	2007	Weekdays	447.9	21,802	62.9	LL38A, LLS11	4.139	2.895	4.815	1.637	WW = (A-M)/76%	2.502	60.5%		1.64	40%
	Summer						0.612	0.244	0.857	0.149		0.463	75.6%	7,351	0.14	23%
LL38A	2007	Weekdays	353.9	24,701	86.3	LL39, LL42, LIA4	3.364	2.359	3.982	1.457	WW = (A-M)/69%	1.907	56.7%		1.44	43%
	Summer					LL45, LL46, LIA7	0.161	0.000	0.408	0.022		0.139	86.4%	1,613	0.04	25%
LL39	2007	Weekdays	196.9	28,093	54.0	LL40, LIA1	0.852	0.575	0.989	0.440	WW = (A-M)/63%	0.412	48.4%		0.44	52%
	Summer						0.177	0.094	0.228	0.095		0.082	46.5%	1,525	0.11	62%
LL40	2007	Weekdays	253.1	30,823	50.0		0.372	0.208	0.488	0.186	WW = (A-M)/88%	0.186	50.0%		0.19	51%
	Summer						0.372	0.208	0.488	0.186		0.186	50.0%	3,719	0.19	51%
LL41	2007	Weekdays	315.3	43,196	73.7		0.303	0.163	0.392	0.159	WW = (A-M)/88%	0.144	47.5%		0.14	46%
	Summer						0.303	0.163	0.392	0.159		0.144	47.5%	1,955	0.14	46%
LL42	2007	Weekdays	122.4	19,918	37.5	LL43	0.934	0.409	1.241	0.597	WW = (A-M)/88%	0.337	36.1%		0.32	34%
	Summer						0.360	0.147	0.463	0.131		0.229	63.6%	6,112	0.09	25%

Table A-7: Dry Weather Analysis - Summer 2007 Weekdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL43	2007	Weekdays	293.2	35,870	57.6		0.574	0.164	0.808	0.466	WW = (A-M)/88%	0.108	18.8%		0.23	40%
	Summer						0.574	0.164	0.808	0.466		0.108	18.8%	1,874	0.23	40%
LL44	2007	Weekdays	190.4	45,120	75.1		0.669	0.569	0.743	0.114	WW = (A-M)/88%	0.555	83.0%		0.36	54%
	Summer						0.669	0.569	0.743	0.114		0.555	83.0%	7,391	0.36	54%
LL45	2007	Weekdays	204.0	20,392	32.5		0.248	0.196	0.276	0.059	WW = (A-M)/88%	0.189	76.2%		0.07	28%
	Summer						0.248	0.196	0.276	0.059		0.189	76.2%	5,815	0.07	28%
LL46	2007	Weekdays	52.7	8,711	13.4		0.211	0.112	0.363	0.112	WW = (A-M)/88%	0.099	46.9%		0.10	47%
	Summer						0.211	0.112	0.363	0.112		0.099	46.9%	7,383	0.10	47%
LL47	2007	Weekdays	282.7	31,130	57.8		0.311	0.212	0.410	0.113	WW = (A-M)/88%	0.198	63.7%		0.10	32%
	Summer						0.311	0.212	0.410	0.113		0.198	63.7%	3,426	0.10	32%
LLS11	2007	Weekdays	82.5	10,565	18.4		0.164	0.136	0.178	0.031	WW = (A-M)/88%	0.133	81.1%		0.01	6%
	Summer						0.164	0.136	0.178	0.031		0.133	81.1%	7,216	0.01	6%

[Yellow box] denotes heavy pumping station influence.

Table A-8: Dry Weather Analysis - Summer 2007 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2007	Saturdays	212.7	51,092	114.7	LL03	8.400	0.000	15.863	4.200	.50*Avg	4.200	50.0%		3.15	38%
	Summer						3.094	0.000	8.713	1.361		1.361	44.0%	11,865	0.37	12%
LL02	Combined with LL01															
LL03	2007	Saturdays	222.0	63,916	137.9	LL05, LL06	5.678	3.121	8.024	2.839	.50*Avg	2.839	50.0%		2.78	49%
	Summer					LL10	1.259	0.000	2.515	1.668		0.466	37.0%	3,379	0.57	45%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2007	Saturdays	94.3	19,784	31.2		0.269	0.100	0.376	0.202	S/S	0.068	25.3%		0.19	71%
	Summer						0.269	0.100	0.376	0.202		0.068	25.3%	2,182	0.19	71%
LL06	2007	Saturdays	231.6	34,937	71.9	LL07	1.696	1.161	2.113	0.984	S/S	0.711	41.9%		1.15	68%
	Summer					LL08	0.920	0.630	1.158	0.572		0.347	37.7%	4,828	0.46	50%
LL07	2007	Saturdays	98.9	33,166	51.5		0.420	0.259	0.558	0.229	S/S	0.192	45.7%		0.39	93%
	Summer						0.420	0.259	0.558	0.229		0.192	45.7%	3,732	0.39	93%
LL08	2007	Saturdays	269.5	38,012	68.8		0.356	0.224	0.469	0.184	S/S	0.172	48.3%		0.30	84%
	Summer						0.356	0.224	0.469	0.184		0.172	48.3%	2,501	0.30	84%
LL09	Combined with LL08															
LL10	2007	Saturdays	175.2	36,546	83.1	LL11, LL12	2.546	1.708	3.191	0.952	WW = (A-M)/88%	1.594	62.6%		0.87	34%
	Summer					LL14	0.775	0.349	1.116	0.394		0.596	76.9%	7,174	0.24	31%
LL11	2007	Saturdays	102.1	26,804	41.8		0.362	0.199	0.519	0.185	WW = (A-M)/88%	0.177	48.9%		0.23	64%
	Summer						0.362	0.199	0.519	0.185		0.177	48.9%	4,235	0.23	64%
LL12	2007	Saturdays	197.9	31,385	68.0	LL13	0.907	0.625	1.118	0.320	WW = (A-M)/88%	0.587	64.7%		0.37	41%
	Summer						0.498	0.378	0.607	0.032		0.466	93.6%	6,850	0.18	36%
LL13	2007	Saturdays	200.4	28,576	50.9		0.409	0.184	0.525	0.288	S/S	0.121	29.6%		0.19	46%
	Summer						0.409	0.184	0.525	0.288		0.121	29.6%	2,376	0.19	46%
LL14	2007	Saturdays	417.9	18,948	39.4		0.502	0.456	0.546	0.053	WW = (A-M)/88%	0.450	89.6%		0.03	6%
	Summer						0.502	0.456	0.546	0.053		0.450	89.6%	11,410	0.03	6%
WEST OF EASTERN AVENUE PS																
LL15	2007	Saturdays	94.0	29,446	53.0	LL16	1.680	1.381	2.224	0.670	S/S	1.010	60.1%		0.64	38%
	Summer						0.732	0.479	1.273	0.446		0.286	39.1%	5,399	0.24	33%
LL16	2007	Saturdays	65.6	16,848	33.4	LL17	0.947	0.841	1.034	0.224	S/S	0.723	76.3%		0.40	42%
	Summer						0.575	0.513	0.638	0.111		0.464	80.7%	13,913	0.28	49%
LL17	2007	Saturdays	82.8	28,790	46.8		0.373	0.300	0.426	0.113	S/S	0.260	69.7%		0.12	32%
	Summer						0.373	0.300	0.426	0.113		0.260	69.7%	5,561	0.12	32%
LL18	2007	Saturdays	85.5	21,887	44.2	LL19	2.963	2.148	3.563	0.927	WW = (A-M)/88%	2.037	68.7%		0.46	16%
	Summer						0.959	0.415	1.343	0.460		0.950	99.1%	21,488	0.12	13%
LL19	2007	Saturdays	158.3	36,352	65.7		2.005	1.594	2.253	0.467	WW = (A-M)/88%	1.538	76.7%		0.34	17%
	Summer						2.005	1.594	2.253	0.467		1.538	76.7%	23,413	0.34	17%
LL20	2007	Saturdays	116.7	27,102	90.5	LL21	13.005	7.333	18.968	5.852	.45*Avg	7.153	55.0%		6.43	49%
	Summer					LL22	1.043	0.784	0.904	0.442		0.601	57.6%	6,639	0.63	60%
LL21	2007	Saturdays	150.3	34,525	65.4		0.940	0.683	1.160	0.450	S/S	0.489	52.0%		0.66	70%
	Summer						0.940	0.683	1.160	0.450		0.489	52.0%	7,476	0.66	70%
LL22	2007	Saturdays	112.7	24,778	64.4	LL23	11.022	5.866	16.904	4.960	.45*Avg	4.400	39.9%		5.14	47%
	Summer					LL25	0.244	0.000	2.255	0.401		0.573	234.8%	8,902	0.66	270%

Table A-8: Dry Weather Analysis - Summer 2007 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL23	2007	Saturdays	120.2	28,970	60.3	LL24	2.142	2.026	2.278	0.359	S/S	1.783	83.2%		0.81	38%
	Summer						1.277	1.133	1.400	0.124		1.153	90.3%	19,121	0.66	52%
LL24	2007	Saturdays	75.9	18,936	33.6		0.865	0.748	0.983	0.235	SS	0.630	72.8%		0.15	17%
	Summer						0.865	0.748	0.983	0.235		0.630	72.8%	18,767	0.15	17%
LL25	2007	Saturdays	185.9	34,167	114.4	LL26	9.130	4.938	14.323	4.200	.46*Avg	3.951	43.3%		3.67	40%
	Summer					LL29A	0.207	0.000	2.663	0.138		0.000	0.0%	0	0.21	101%
LL26	2007	Saturdays	117.5	24,203	53.3	LL27	1.222	0.767	1.710	0.672	.55*Avg	0.767	62.8%		0.42	34%
	Summer						0.147	0.000	0.480	0.127		0.222	150.7%	4,159	0.15	102%
LL27	2007	Saturdays	319.3	27,273	51.9	LL28	1.091	0.833	1.336	0.546	.60*Avg	0.546	50.0%		0.27	25%
	Summer						0.124	0.000	0.352	0.060		0.060	48.4%	1,157	0.15	121%
LL28	2007	Saturdays	374.7	27,013	56.4		0.971	0.803	1.189	0.486	.60*Avg	0.486	50.0%		0.12	12%
	Summer						0.971	0.803	1.189	0.486		0.486	50.0%	8,604	0.12	12%
LL29	Combined with LL25															
LL29A	2007	Saturdays	106.9	16,538	62.3	LL30, LL32, LL33	8.815	6.781	10.484	3.390	WW = (A-M)/60%	6.365	72.2%		3.03	34%
	Summer					LL34, LL38	0.534	0.000	1.063	0.053		1.412	264.4%	22,665	0.02	4%
LL30	2007	Saturdays	75.9	25,301	42.9	LL31	1.158	0.789	1.429	0.419	WW = (A-M)/88%	0.739	63.8%		0.33	28%
	Summer						0.831	0.591	1.008	0.227		0.604	72.7%	14,073	0.15	18%
LL31	2007	Saturdays	60.7	18,673	30.4		0.327	0.182	0.430	0.192	S/S	0.135	41.3%		0.18	55%
	Summer						0.327	0.182	0.430	0.192		0.135	41.3%	4,447	0.18	55%
LL32	2007	Saturdays	450.4	40,968	81.0		0.390	0.260	0.489	0.188	S/S	0.202	51.8%		0.25	64%
	Summer						0.390	0.260	0.489	0.188		0.202	51.8%	2,495	0.25	64%
LL33	2007	Saturdays	83.6	19,152	34.9		0.326	0.190	0.716	0.154	WW = (A-M)/88%	0.172	52.8%		0.08	25%
	Summer						0.326	0.190	0.716	0.154		0.172	52.8%	4,924	0.08	25%
LL34	2007	Saturdays	87.5	22,042	44.1	LL35	2.476	2.053	2.808	1.057	S/S	1.419	57.3%		0.71	29%
	Summer						1.275	1.075	1.427	0.584		0.691	54.2%	15,655	0.13	10%
LL35	2007	Saturdays	98.9	25,518	46.5	LL36, LL37	1.201	0.967	1.388	0.473	S/S	0.728	60.6%		0.58	48%
	Summer						0.294	0.177	0.387	0.197		0.097	33.0%	2,087	0.22	75%
LL36	2007	Saturdays	109.6	29,335	48.7		0.361	0.285	0.415	0.116	S/S	0.245	67.9%		0.20	55%
	Summer						0.361	0.285	0.415	0.116		0.245	67.9%	5,034	0.20	55%
LL37	2007	Saturdays	85.4	22,637	37.9		0.546	0.453	0.620	0.160	S/S	0.386	70.7%		0.16	29%
	Summer						0.546	0.453	0.620	0.160		0.386	70.7%	10,190	0.16	29%
LL38	2007	Saturdays	447.9	21,802	62.9	LL38A, LLS11	3.940	2.983	4.745	1.519	WW = (A-M)/63%	2.421	61.4%		1.64	42%
	Summer						0.531	0.188	0.879	0.240		0.291	54.8%	4,625	0.14	26%
LL38A	2007	Saturdays	353.9	24,701	86.3	LL39, LL42, LIA4	3.259	2.386	4.018	1.247	WW = (A-M)/70%	2.012	61.7%		1.44	44%
	Summer						0.240	0.000	0.529	0.065		0.152	63.3%	1,760	0.04	17%
LL39	2007	Saturdays	196.9	28,093	54.0	LL40, LIA1	0.881	0.593	1.036	0.384	WW = (A-M)/75%	0.497	56.4%		0.44	50%
	Summer						0.174	0.071	0.231	0.055		0.186	106.9%	3,446	0.11	63%
LL40	2007	Saturdays	253.1	30,823	50.0		0.406	0.235	0.511	0.194	WW = (A-M)/88%	0.211	52.0%		0.19	47%
	Summer						0.406	0.235	0.511	0.194		0.211	52.0%	4,218	0.19	47%
LL41	2007	Saturdays	315.3	43,196	73.7		0.301	0.182	0.403	0.135	WW = (A-M)/88%	0.166	55.1%		0.14	47%
	Summer						0.301	0.182	0.403	0.135		0.166	55.1%	2,254	0.14	47%
LL42	2007	Saturdays	122.4	19,918	37.5	LL43	0.761	0.390	0.944	0.422	WW = (A-M)/88%	0.339	44.5%		0.32	42%
	Summer						0.352	0.168	0.541	0.152		0.201	57.1%	5,364	0.09	26%

Table A-8: Dry Weather Analysis - Summer 2007 Saturdays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL43	2007	Saturdays	293.2	35,870	57.6		0.409	0.171	0.663	0.270	WW = (A-M)/88%	0.138	33.7%		0.23	57%
	Summer						0.409	0.171	0.663	0.270		0.138	33.7%	2,395	0.23	56%
LL44	2007	Saturdays	190.4	45,120	75.1		0.654	0.545	0.760	0.125	WW = (A-M)/88%	0.530	81.0%		0.36	55%
	Summer						0.654	0.545	0.760	0.125		0.530	81.0%	7,058	0.36	55%
LL45	2007	Saturdays	204.0	20,392	32.5		0.243	0.203	0.282	0.046	WW = (A-M)/88%	0.197	81.1%		0.07	29%
	Summer						0.243	0.203	0.282	0.046		0.197	81.1%	6,062	0.07	29%
LL46	2007	Saturdays	52.7	8,711	13.4		0.222	0.118	0.374	0.118	WW = (A-M)/88%	0.104	46.8%		0.10	45%
	Summer						0.222	0.118	0.374	0.118		0.104	46.8%	7,755	0.10	45%
LL47	2007	Saturdays	282.7	31,130	57.8		0.280	0.204	0.337	0.087	WW = (A-M)/88%	0.193	68.9%		0.10	36%
	Summer						0.280	0.204	0.337	0.087		0.193	68.9%	3,339	0.10	36%
LLS11	2007	Saturdays	82.5	10,565	18.4		0.150	0.121	0.169	0.032	WW = (A-M)/88%	0.118	78.7%		0.01	7%
	Summer						0.150	0.121	0.169	0.032		0.118	78.7%	6,403	0.01	7%

[Yellow Box] denotes heavy pumping station influence.

Table A-9: Dry Weather Analysis - Summer 2007 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
EAST OF EASTERN AVENUE PS																
LL01	2007	Sundays	212.7	51,092	114.7	LL03	7.394	1.335	12.418	3.697	.50*Avg	3.697	50.0%		3.15	43%
	Summer						2.142	0.000	6.598	0.978		0.978	45.7%	8,526	0.37	17%
LL02	Combined with LL01															
LL03	2007	Sundays	222.0	63,916	137.9	LL05, LL06	5.438	2.771	7.959	2.719	.50*Avg	2.719	50.0%		2.78	51%
	Summer					LL10	1.033	0.000	2.322	1.514		0.469	45.4%	3,401	0.57	55%
LL04	Combined with LL03															
LL04A	Combined with LL03															
LL05	2007	Sundays	94.3	19,784	31.2		0.283	0.110	0.400	0.209	S/S	0.074	26.1%		0.19	67%
	Summer						0.283	0.110	0.400	0.209		0.074	26.1%	2,374	0.19	67%
LL06	2007	Sundays	231.6	34,937	71.9	LL07	1.743	1.106	2.246	1.105	S/S	0.638	36.6%		1.15	66%
	Summer					LL08	0.954	0.620	1.192	0.656		0.298	31.2%	4,146	0.46	48%
LL07	2007	Sundays	98.9	33,166	51.5		0.568	0.253	0.568	0.246	S/S	0.183	32.2%		0.39	69%
	Summer						0.568	0.253	0.568	0.246		0.183	32.2%	3,557	0.39	69%
LL08	2007	Sundays	269.5	38,012	68.8		0.360	0.211	0.514	0.203	S/S	0.157	43.6%		0.30	83%
	Summer						0.360	0.211	0.514	0.203		0.157	43.6%	2,283	0.30	83%
LL09	Combined with LL08															
LL10	2007	Sundays	175.2	36,546	83.1	LL11, LL12	2.485	1.652	3.148	0.947	WW = (A-M)/88%	1.538	61.9%		0.87	35%
	Summer					LL14	0.771	0.430	1.005	0.276		0.495	64.2%	5,958	0.24	31%
LL11	2007	Sundays	102.1	26,804	41.8		0.350	0.175	0.508	0.199	WW = (A-M)/88%	0.151	43.1%		0.23	66%
	Summer						0.350	0.175	0.508	0.199		0.151	43.1%	3,613	0.23	66%
LL12	2007	Sundays	197.9	31,385	68.0	LL13	0.905	0.578	1.135	0.371	WW = (A-M)/88%	0.534	59.0%		0.37	41%
	Summer						0.509	0.342	0.603	0.104		0.405	79.6%	5,953	0.18	35%
LL13	2007	Sundays	200.4	28,576	50.9		0.396	0.191	0.546	0.267	S/S	0.129	32.6%		0.19	48%
	Summer						0.396	0.191	0.546	0.267		0.129	32.6%	2,533	0.19	48%
LL14	2007	Sundays	417.9	18,948	39.4		0.458	0.370	0.552	0.100	WW = (A-M)/88%	0.358	78.2%		0.03	7%
	Summer						0.458	0.370	0.552	0.100		0.358	78.2%	9,077	0.03	7%
WEST OF EASTERN AVENUE PS																
LL15	2007	Sundays	94.0	29,446	53.0	LL16	1.695	1.402	2.172	0.663	S/S	1.032	60.9%		0.64	38%
	Summer						0.755	0.555	1.162	0.428		0.327	43.3%	6,173	0.24	32%
LL16	2007	Sundays	65.6	16,848	33.4	LL17	0.940	0.827	1.029	0.235	S/S	0.705	75.0%		0.40	43%
	Summer						0.555	0.515	0.600	0.119		0.436	78.6%	13,073	0.28	50%
LL17	2007	Sundays	82.8	28,790	46.8		0.385	0.311	0.457	0.116	S/S	0.269	69.9%		0.12	31%
	Summer						0.385	0.311	0.457	0.116		0.269	69.9%	5,754	0.12	31%
LL18	2007	Sundays	85.5	21,887	44.2	LL19	3.051	2.327	3.548	0.823	WW = (A-M)/88%	2.228	73.0%		0.46	15%
	Summer						1.042	0.599	1.338	0.342		1.156	110.9%	26,148	0.12	12%
LL19	2007	Sundays	158.3	36,352	65.7		2.009	1.586	2.249	0.481	WW = (A-M)/88%	1.528	76.1%		0.34	17%
	Summer						2.009	1.586	2.249	0.481		1.528	76.1%	23,261	0.34	17%
LL20	2007	Sundays	116.7	27,102	90.5	LL21	13.090	8.876	16.854	6.283	.48*Avg	6.807	52.0%		6.43	49%
	Summer					LL22	2.439	0.000	6.337	0.670		1.698	69.6%	18,764	0.63	26%
LL21	2007	Sundays	150.3	34,525	65.4		0.947	0.706	1.169	0.432	S/S	0.515	54.4%		0.66	70%
	Summer						0.947	0.706	1.169	0.432		0.515	54.4%	7,873	0.66	70%
LL22	2007	Sundays	112.7	24,778	64.4	LL23	9.775	5.145	14.127	5.181	.53*Avg	4.594	47.0%		5.14	53%
	Summer					LL25	0.008	0.000	0.325	0.555		0.000	0.0%	0	0.66	8250%

Table A-9: Dry Weather Analysis - Summer 2007 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL23	2007	Sundays	120.2	28,970	60.3	LL24	2.174	1.993	2.321	0.524	S/S	1.650	75.9%		0.81	37%
	Summer						1.336	1.230	1.469	0.311		1.025	76.7%	16,998	0.66	49%
LL24	2007	Sundays	75.9	18,936	33.6		0.838	0.731	0.912	0.214	SS	0.625	74.6%		0.15	18%
	Summer						0.838	0.731	0.912	0.214		0.625	74.6%	18,618	0.15	18%
LL25	2007	Sundays	185.9	34,167	114.4	LL26	8.727	4.912	12.247	4.102	.47*Avg	4.625	53.0%		3.67	42%
	Summer					LL29A	0.122	0.000	1.256	0.172		0.000	0.0%	0	0.21	172%
LL26	2007	Sundays	117.5	24,203	53.3	LL27	1.272	0.839	1.678	0.481	WW = (A-M)/90%	0.791	62.2%		0.42	33%
	Summer						0.285	0.000	0.501	0.230		0.000	0.0%	-2	0.15	64%
LL27	2007	Sundays	319.3	27,273	51.9	LL28	1.042	0.821	1.247	0.251	WW = (A-M)/88%	0.791	75.9%		0.27	26%
	Summer						0.198	0.071	0.328	0.061		0.137	69.2%	2,642	0.15	76%
LL28	2007	Sundays	374.7	27,013	56.4		0.844	0.677	1.018	0.190	WW = (A-M)/88%	0.654	77.5%		0.12	14%
	Summer						0.844	0.677	1.018	0.190		0.654	77.5%	11,590	0.12	14%
LL29	Combined with LL25															
LL29A	2007	Sundays	106.9	16,538	62.3	LL30, LL32, LL33	8.509	6.440	9.939	3.448	WW = (A-M)/60%	5.061	59.5%		3.03	36%
	Summer					LL34, LL38	0.451	0.000	1.088	0.267		0.171	37.8%	2,738	0.02	4%
LL30	2007	Sundays	75.9	25,301	42.9	LL31	1.127	0.793	1.429	0.379	WW = (A-M)/88%	0.748	66.4%		0.33	29%
	Summer						0.819	0.624	1.007	0.192		0.627	76.6%	14,609	0.15	18%
LL31	2007	Sundays	60.7	18,673	30.4		0.308	0.165	0.422	0.187	S/S	0.121	39.3%		0.18	58%
	Summer						0.308	0.165	0.422	0.187		0.121	39.3%	3,986	0.18	58%
LL32	2007	Sundays	450.4	40,968	81.0		0.439	0.286	0.598	0.222	S/S	0.217	49.4%		0.25	57%
	Summer						0.439	0.286	0.598	0.222		0.217	49.4%	2,681	0.25	57%
LL33	2007	Sundays	83.6	19,152	34.9		0.322	0.168	0.659	0.174	WW = (A-M)/88%	0.148	46.0%		0.08	25%
	Summer						0.322	0.168	0.659	0.174		0.148	46.0%	4,237	0.08	25%
LL34	2007	Sundays	87.5	22,042	44.1	LL35	2.494	2.051	2.814	1.092	S/S	1.402	56.2%		0.71	28%
	Summer						1.284	1.075	1.434	0.619		0.665	51.8%	15,066	0.13	10%
LL35	2007	Sundays	98.9	25,518	46.5	LL36, LL37	1.210	0.976	1.415	0.474	S/S	0.736	60.8%		0.58	48%
	Summer						0.274	0.185	0.378	0.204		0.070	25.5%	1,506	0.22	80%
LL36	2007	Sundays	109.6	29,335	48.7		0.361	0.260	0.421	0.148	S/S	0.213	59.0%		0.20	55%
	Summer						0.361	0.260	0.421	0.148		0.213	59.0%	4,376	0.20	55%
LL37	2007	Sundays	85.4	22,637	37.9		0.574	0.508	0.642	0.121	S/S	0.453	78.9%		0.16	28%
	Summer						0.574	0.508	0.642	0.121		0.453	78.9%	11,959	0.16	28%
LL38	2007	Sundays	447.9	21,802	62.9	LL38A, LLS11	3.689	2.875	4.369	1.314	WW = (A-M)/62%	2.375	64.4%		1.64	44%
	Summer						0.391	0.129	0.651	0.314		0.077	19.7%	1,223	0.14	36%
LL38A	2007	Sundays	353.9	24,701	86.3	LL39, LL42, LIA4	3.140	2.466	3.664	0.963	WW = (A-M)/70%	2.177	69.3%		1.44	46%
	Summer					LL45, LL46, LIA7	0.326	0.059	0.487	0.021		0.304	93.2%	3,520	0.04	12%
LL39	2007	Sundays	196.9	28,093	54.0	LL40, LIA1	0.882	0.583	1.057	0.475	WW = (A-M)/63%	0.407	46.2%		0.44	50%
	Summer						0.147	0.090	0.255	0.115		0.178	121.1%	3,298	0.11	75%
LL40	2007	Sundays	253.1	30,823	50.0		0.414	0.243	0.511	0.194	WW = (A-M)/88%	0.220	53.1%		0.19	46%
	Summer						0.414	0.243	0.511	0.194		0.220	53.1%	4,398	0.19	46%
LL41	2007	Sundays	315.3	43,196	73.7		0.322	0.176	0.463	0.166	WW = (A-M)/88%	0.156	48.4%		0.14	43%
	Summer						0.322	0.176	0.463	0.166		0.156	48.4%	2,118	0.14	43%
LL42	2007	Sundays	122.4	19,918	37.5	LL43	0.578	0.473	0.661	0.119	WW = (A-M)/88%	0.459	79.4%		0.32	55%
	Summer						0.327	0.248	0.365	0.023		0.304	93.0%	8,113	0.09	28%

Table A-9: Dry Weather Analysis - Summer 2007 Sundays

Meter	Year/ Season	Day Group	Area (ac)	Length of Sewer (ft)	Footprint (in- mi)	Upstream Meter(s)	Avg (MGD)	Min (MGD)	Peak (MGD)	WW Production (MGD)	WW Method	BI (MGD)	% Infil.	Severity (gpd/in-mi)	Water Use (MGD)	% Water Use
LL43	2007	Sundays	293.2	35,870	57.6		0.251	0.167	0.309	0.095	WW = (A-M)/88%	0.156	62.2%		0.23	92%
	Summer						0.251	0.167	0.309	0.095		0.156	62.2%	2,707	0.23	92%
LL44	2007	Sundays	190.4	45,120	75.1		0.651	0.532	0.784	0.135	WW = (A-M)/88%	0.516	79.3%		0.36	55%
	Summer						0.651	0.532	0.784	0.135		0.516	79.3%	6,872	0.36	55%
LL45	2007	Sundays	204.0	20,392	32.5		0.241	0.191	0.276	0.056	WW = (A-M)/88%	0.185	76.8%		0.07	29%
	Summer						0.241	0.191	0.276	0.056		0.185	76.8%	5,692	0.07	29%
LL46	2007	Sundays	52.7	8,711	13.4		0.180	0.110	0.240	0.081	WW = (A-M)/88%	0.099	55.0%		0.10	56%
	Summer						0.180	0.110	0.240	0.081		0.099	55.0%	7,383	0.10	56%
LL47	2007	Sundays	282.7	31,130	57.8		0.283	0.216	0.348	0.076	WW = (A-M)/88%	0.207	73.1%		0.10	35%
	Summer						0.283	0.216	0.348	0.076		0.207	73.1%	3,581	0.10	35%
LLS11	2007	Sundays	82.5	10,565	18.4		0.158	0.125	0.178	0.037	WW = (A-M)/88%	0.121	76.6%		0.01	6%
	Summer						0.158	0.125	0.178	0.037		0.121	76.6%	6,565	0.01	6%

[Yellow Box] denotes heavy pumping station influence.

Table A-10: Raw Values for RDII Volume by Rain and Sewer Length

Meter Sub-basin	RDII Volume Per Inch Per Length of Sewer (gal/in <sup>3</sup> ft)																				Summer 2007 Avg										
	5/11/2006	5/14/2006	6/2/2006	6/19/2006	6/24/2006	6/25/2006	7/5/2006	7/22/2006	9/1/2006	9/5/2006	9/14/2006	9/28/2006	10/5/2006	10/17/2006	10/19/2006	10/27/2006	Summer 2006 Avg	11/7/2006	11/16/2006	11/22/2006	12/22/2006	12/25/2006	1/7/2007	3/1/2007	Winter 2007 Avg	3/15/2007	3/23/2007	4/4/2007	4/11/2007	4/14/2007	Summer 2007 Avg
LL01/LL02*	16.15	58.818	18.357	37.689	21.269	6.338-c	31.829	5.533-c	22.396	24.876	35.354	30.264	n/a-c	15.6	25.373	20.204	27.55	26.539	23.565-c	24.636-c	32.71	102.028	66.928	67.62	59.17	n/a	133.647	49.214	39.217	n/a-c	74.03
LL03/LL04/LL04A*	8.288	7.65	4.013	24.214-c	5.621-c	n/a-c	2.47	n/a	10.020-c	3.131-c	3.646	3.951	n/a	4.027-c	13.255-c	13.735-c	5.00	11.278	n/a	n/a-c	11.53	24.100-c	2.799	40.832	16.61	44.611-c	86.502	14.986	18.606	n/a-c	40.03
LL05	3.33	2.314	3.219	3.762	4.618	4.572	4.251	2.685	n/a	n/a	10.716	6.262	10.687	7.288	6.741	9.484	5.71	9.365	5.654	11.438	6.849	9.979	10.13	9.985	9.06	13.917	13.098	5.018	6.343	10.093	9.69
LL06	3.819-c	10.326	4.184	n/a	n/a-c	n/a-c	4.011	3.136	8.596	4.775	6.004	4.717	3.714	3.432-c	n/a-c	n/a	5.50	10.694	9.012	11.413	13.18	8.772-c	20.319	13.214-c	12.92	n/a-c	25.297	4.055-c	11.318	n/a	18.31
LL07	n/a	1.855	1.287	2.896	n/a	n/a	2.134	2.046	4.977	4.32	7.335	3.463	5.639	3.986	5.845	6.032	3.99	7.572	3.367	9.636	5.517	6.16	6.77	5.885	6.42	7.108	16.927	3.19	3.257	5.246	7.15
LL08/LL09*	1.604	1.975	1.712	2.898	3.613	5.966	4.526	2.221	4.661	5.486	7.436	3.75	9.253	n/a	n/a	7.148	4.45	6.289	6.234	3.521	5.069	n/a	2.433	n/a	4.71	n/a	9.143	n/a	4.498	7.333	6.99
LL10	2.958-c	1.450-c	2.354	1.198-c	n/a-c	2.627-c	4.803-c	2.370-c	5.789-c	5.360-c	2.256-c	3.303-c	9.957-c	n/a-c	1.329-c	6.216-c	2.35	15.927	4.474	n/a-c	5.122	10.460-c	9.51	9.685-c	2.539	2.024-c	10.759-c	4.815-c	2.54		
LL11	1.574	1.445	3.075	n/a	n/a	1.216	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.83	5.983	2.466	n/a	4.453	n/a	7.29	13.443	6.73	n/a	15.231	n/a	10.657	3.492	9.79	
LL12	3.509	6.155	5.207	6.853	5.119-c	4.071	4.772-c	3.03	8.056	n/a	9.969	6.102	9.817-c	3.468	10.779	9.046	6.35	8.939	5.375-c	6.921-c	8.566	9.410-c	10.313-c	10.137-c	8.75	12.126	7.424	3.983	6.056	10.49	8.02
LL13	3.498	3.611	1.902	10.201	n/a	2.301	n/a	2.715	2.188	2.505	4.689	2.741	n/a	5.621	4.706	2.916	3.81	n/a	6.579	n/a	n/a	4.92	5.11	2.405	4.63	6.399	5.948	4.90			
LL14	n/a	n/a	1.688	n/a	n/a	n/a	n/a	n/a	n/a	n/a	11.679	10.797	10.31	8.027	6.986	n/a	8.25	5.712	20.828	n/a	8.25	12.477	19.793	n/a	13.41	n/a	62.988	n/a	n/a	62.99	
LL15	3.715	3.805	2.45	2.583	1.515	1.323	2.323	2.422	5.98	7.607	4.741	2.216	10.305	12.96	6.697	8.357	4.94	5.985	11.724	11.751	3.572	16.781	14.705	13.347	11.12	n/a-c	20.199	4.917	4.785	n/a	9.97
LL16	1.076	0.796-c	2.259	8.424	1.358	3.443	10.097	1.904-c	2.37	3.935	6.744	5.351	14.151	2.114-c	6.163-c	5.320-c	5.38	2.309	2.733	4.476	10.642	14.002	10.107	7.76	n/a-c	11.524	9.625	7.244	18.567	11.74	
LL17	2.886	n/a	1.685	0.35	2.319	4.309	3.307	n/a	6.274	3.551	3.578	3.845	5.753	n/a	n/a	3.44	8.217	8.446	9.818	6.046	3.849	6.815	7.726	n/a	14.148	0.364	0.829	4.132	4.87		
LL18	10.772	15.031	9.166	20.323	5.81	8.85	11.623	4.462	n/a	n/a	9.601	11.613	20.191	11.073	26.484	9.527	12.47	10.898-c	19.222	28.418	15.288	33.308	24.806	25.034	24.35	21.947	35.213	14.062	21.298	14.579	21.42
LL19	4.991	2.826	3.275	2.928	5.456	8.116	7.211	2.959	5.901	7.174	8.969	4.947	10.4	9.516	9.646	11.185	6.59	n/a	6.758	16.791	8.301	8.181	11.535	9.077	10.11	13.154	7.466	5.075	8.502	7.846	8.41
LL20	79.138	51.816-c	94.584	405.618	141.35	31.048	115.637	201.144	97.192	67.03	298.058	141.347	310.428	105.717	51.193	99.994	180.01	207.416	168.249	702.18	27.292	722.25	522.814	206.593	365.26	36.353-c	117.292-c	30.279	48.515	21.603	33.47
LL21	1.391	n/a	3.46	2.677	1.436	3.06	6.656	0.866	4.073	8.75	1.18	3.978	8.9	4.901	0.455	6.257	3.87	6.111	3.982	14.147	1.653	7.308	7.843	5.2	6.61	n/a	n/a	1.003	2.756	7.394	3.72
LL22	7.612	16.755	12.808	58.186-c	10.697	12.476	17.176	14.301-c	14.571	43.609	17.438-c	26.327	22.781	17.030-c	22.348-c	16.240-c	18.48	16.607-c	42.798-c	35.53	15.351-c	53.908-c	72.534	6.621-c	54.03	16.809-c	107.041	38.36	32.583	16.230-c	59.33
LL23	2.016	4.762	0.583	2.704	1.943	1.04	3.132	n/a	1.544	2.084	n/a	0.853	2.812	n/a	n/a	2.13	n/a	1.814	n/a	n/a	3.132	n/a	2.47	n/a	0.6	5.14	1.729	n/a-c	2.49		
LL24	2.016	2.103	5.028	11.402	2.18	1.679	3.371	1.024	2.975	4.768	2.363	3.7	3.188	2.729	6.606</																

Table A-11: Raw Values for RDII Capture Coefficient

Meter Sub-basin	RDII Capture Coefficient (%)																				Summer 2007 Avg												
	5/11/2006	5/14/2006	6/2/2006	6/19/2006	6/24/2006	6/25/2006	7/5/2006	7/22/2006	9/1/2006	9/5/2006	9/14/2006	9/28/2006	10/5/2006	10/17/2006	10/19/2006	10/27/2006	Summer 2006 Avg	11/7/2006	11/16/2006	11/22/2006	12/22/2006	12/25/2006	1/7/2007	3/1/2007	Winter 2007 Avg	3/15/2007	3/23/2007	4/4/2007	4/11/2007	4/14/2007	Summer 2007 Avg		
LL01/LL02*	14.29	52.043	16.243	33.348	18.819	5.586-c	28.163	5.392-c	19.816	22.011	31.282	26.778	n/a-c	13.803	22.451	17.877	24.38	23.482	22.964-c	15.845-c	28.942	90.277	59.22	59.832	52.35	n/a	118.254	43.546	34.7	n/a-c	65.50		
LL03/LL04/LL04A*	8.789	8.112	4.236	25.677-c	5.961-c	n/a-c	2.619	n/a	10.626-c	3.320-c	3.866	4.189	n/a	4.271-c	14.056-c	14.565-c	5.30	11.96	n/a	n/a-c	12.227	25.557-c	2.968	43.3	17.61	47.307-c	91.729	15.892	19.731	n/a-c	42.45		
LL05	2.573	1.788	2.488	2.907	3.569	3.533	3.285	2.075	n/a	n/a	8.281	4.839	8.259	5.632	5.21	7.329	4.41	7.237	4.37	8.839	5.293	7.711	7.828	7.716	7.00	10.755	10.122	3.878	4.902	7.8	7.49		
LL06	2.898-c	5.736	2.324	n/a	n/a-c	n/a-c	2.228	1.742	4.775	2.652	3.335	2.62	2.063	1.840-c	n/a-c	n/a	3.05	5.94	5.006	6.339	7.321	4.703-c	11.286	7.085-c	7.18	n/a-c	14.051	2.174-c	6.287	n/a	10.17		
LL07	n/a	2.292	1.59	3.578	n/a	n/a	2.637	2.528	6.15	5.338	9.062	4.279	6.967	4.924	7.222	7.452	4.92	9.355	4.16	11.906	6.816	7.611	8.364	7.27	7.93	8.782	20.913	3.942	4.024	6.481	8.83		
LL08/LL09*	0.834	1.026	0.889	1.505	1.877	3.099	2.351	1.154	2.421	2.524-c	1.863-c	2.513-c	1.898-c	2.779-c	8.378-c	n/a-c	1.118-c	2.710-c	1.81	12.236	3.437	n/a-c	3.935	n/a-c	9.617	3.605-c	7.31	4.223-c	1.951	0.883-c	3.707-c	1.659-c	1.95
LL10	1.019-c	0.500-c	1.809	0.522-c	n/a-c	0.905-c	2.094-c	1.033-c	2.524-c	2.513-c	1.898-c	2.779-c	8.378-c	n/a-c	1.118-c	2.710-c	1.81	12.236	3.437	n/a-c	3.935	n/a-c	9.617	3.605-c	7.31	4.223-c	1.951	0.883-c	3.707-c	1.659-c	1.95		
LL11	1.522	1.398	2.974	n/a	n/a	1.176	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.77	5.787	2.385	n/a	4.307	n/a	7.05	13.002	6.51	n/a	14.731	n/a	10.307	3.378	9.47		
LL12	2.05	3.595	3.041	4.002	2.838-c	2.378	2.646-c	1.77	4.705	n/a	5.823	3.564	5.443-c	2.025	6.296	5.283	3.71	5.221	2.980-c	3.837-c	5.003	5.217-c	5.717-c	5.620-c	5.11	7.082	4.336	2.326	3.537	6.127	4.68		
LL13	1.837	1.896	0.999	5.356	n/a	1.208	n/a	1.425	1.149	1.316	2.462	1.439	n/a	2.952	2.471	1.531	2.00	1.712	n/a	n/a	3.454	n/a	n/a	n/a	2.58	2.683	1.263	2.431	3.36	3.123	2.57		
LL14	n/a	n/a	0.282	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.95	1.803	1.722	1.34	1.167	n/a	1.38	0.954	3.478	n/a	1.378	2.084	3.305	n/a	2.24	n/a	10.518	n/a	n/a	10.52			
LL15	4.286	4.391	2.827	2.98	1.749	1.526	2.68	2.795	6.901	8.778	5.471	2.558	11.891	14.955	7.727	9.643	5.70	6.907	13.529	13.56	4.121	19.365	16.969	15.401	12.84	n/a-c	23.308	5.673	5.521	n/a	11.50		
LL16	1.018	0.901-c	2.137	7.968	1.285	3.256	9.549	2.157-c	2.241	3.721	6.378	5.061	13.383	2.394-c	6.980-c	6.025-c	5.09	2.184	2.585	4.233	10.065	13.243	9.559	9.511	7.34	n/a-c	10.899	9.103	6.851	17.56	11.10		
LL17	3.696	n/a	2.158	0.449	2.97	5.519	4.235	n/a	8.035	4.548	4.583	4.924	7.368	n/a	n/a	n/a	4.41	10.523	10.817	12.574	7.743	4.929	8.728	9.895	9.32	n/a	18.119	0.466	1.061	5.292	6.23		
LL18	10.159	14.176	8.645	19.168	5.479	8.347	10.962	4.209	n/a	n/a	9.055	10.953	19.042	10.443	24.978	8.985	11.76	9.589-c	18.129	26.802	14.418	31.414	23.396	23.61	22.96	20.699	33.21	13.262	20.087	13.75	20.20		
LL19	4.221	2.39	2.77	2.476	4.614	6.864	6.099	2.502	4.991	6.067	7.586	4.184	8.795	8.048	8.158	9.459	5.58	n/a	5.716	14.201	7.021	6.919	9.756	7.677	8.55	11.125	6.315	4.292	7.19	6.635	7.11		
LL20	67.683	44.040-c	80.893	346.908	120.891	26.554	57.328	254.916	120.888	265.496	90.415	437.832	85.521	153.96	177.394	143.896	600.545	23.342	617.71	447.141	176.69	312.39	30.897-c	99.690-c	25.897	41.493	18.477	28.62					
LL21	1.177	n/a	2.926	2.265	1.215	2.588	5.63	0.732	3.445	7.4	0.998	3.364	7.527	4.145	0.385	5.292	3.27	5.168	3.368	11.965	1.398	6.181	6.634	4.398	5.59	n/a	n/a	0.848	2.331	6.254	3.14		
LL22	6.164	13.568	10.372	42.300-c	8.662	10.103	13.909	12.157-c	11.799	35.313	14.823-c	21.319	18.448	14.477-c	18.998-c	13.805-c	14.97	14.118-c	36.382-c	28.771	13.050-c	45.826-c	58.737	5.628-c	43.75	14.289-c	86.679	31.063	26.385	14.073-c	48.04		
LL23	1.79	4.228	0.518	2.401	1.726	0.923	2.78	n/a	1.371	1.85	n/a	0.758	2.497	n/a	n/a	n/a	1.89	n/a	1.611	n/a	n/a	2.781	n/a	2.20	n/a	0.533	4.564	1.535	n/a-c	2.21			
LL24	1.854	1.933	4.622	10.483	2.005	1.544	3.1	0.942	2.735	4.383	2.172	3.402	2.931</																				